

Table Of Contents

- ☐ [COVER](#)
- ☐ [1 Safety Precautions](#)
- ☐ [1.1 General Guidelines](#)
- ☐ [1.2 Leakage Current Cold Check](#)
- ☐ [1.3 Leakage Current Hot Check](#)
- ☐ [1.4 X-Radiation](#)
- ☐ [1.5 Horizontal Osc. Disable Circuit Test](#)
- ☐ [1.6 Repair Procedure of Horizontal Osc. Disable Circuit](#)
- ☐ [2 Disassembly Instructions](#)
- ☐ [2.1 Printed Circuit Board Layout](#)
- ☐ [2.2 Removal of Top Cabinet](#)
- ☐ [2.3 Removal of Rear Cover](#)
- ☐ [2.4 Removal of DS-P.C.Board \(for BT-S1315DAD/S1415DAD only\)](#)
- ☐ [2.5 Removal of B- and W-P.C.Boards](#)
- ☐ [2.6 Removal of A-P.C.Board](#)
- ☐ [3 Picture Tube Replacement](#)
- ☐ [3.1 Replacement Procedure](#)
- ☐ [3.2 Location of Magnets](#)
- ☐ [4 Measurements and Adjustments](#)
- ☐ [4.1 Adjustment procedure Flowchart](#)
- ☐ [4.2 Location of Test Points and Adjustment Control](#)
- ☐ [4.3 Warnings](#)
- ☐ [4.4 Caution](#)

Service Manual

[TOP](#) [NEXT](#)

VED0006296C0

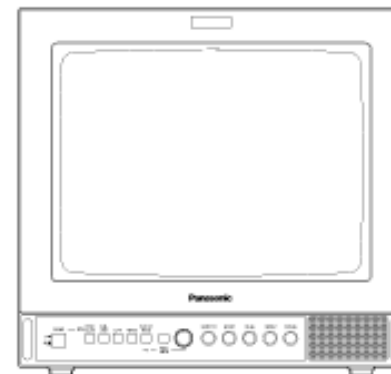
D6

Service Manual

Color Video Monitor

BT-S1315DA/BT-S1315DAD/BT-S1415DA/BT-S1415DAD

G19M-1 Chassis



[4.5 Notes](#)[4.6 Switching between USER and
FACTORY Modes](#)[4.7 Purity Adjustment](#)[4.7.1 Equipment to be used](#)[4.7.2 Adjustment Procedure](#)[4.8 Convergence Adjustment](#)[4.8.1 Equipment to be used](#)[4.8.2 Adjustment Procedure](#)[4.9 Deflection Adjustment and
Check](#)[4.9.1 Equipment to be used](#)[4.9.2 Initial Settings](#)[4.9.3 Adjustment Procedure](#)[4.10 Cut Off Adjustment](#)[4.10.1 Equipment to be used](#)[4.10.2 Initial Settings](#)[4.10.3 Adjustment Procedure](#)[4.11 Contrast Adjustment](#)[4.11.1 Equipment to be used](#)[4.11.2 Initial Settings](#)[4.11.3 Adjustment Procedure](#)[4.12 NTSC Color Output](#)[Adjustment](#)[4.12.1 Equipment to be used](#)[4.12.2 Initial Settings](#)[4.12.3 Adjustment Procedure](#)[4.13 White Balance Adjustment](#)[4.13.1 Equipment to be used](#)[4.13.2 Initial Setting](#)

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service Manual.

Specifications

Power Source:

120 V AC, 50 Hz / 60 Hz (BT-S1315DA/DAD)
220 V - 240 V AC, 50 Hz (BT-S1415DA/DAD)

Maximum Amperes:

1.1 A (BT-S1315DA/DAD)
0.4 A (BT-S1415DA/DAD)

Peak Inrush Current:

Less than 25 A (by EN55103-1 on 1996) (BTS1415DA/DAD)

Picture Tube:

335.4 mm (13") diagonal, 90° deflection, In-line gun,
Dot pitch 0.63 mm (BT-S1315DA/DAD)
368.2 mm (14") diagonal, 90° deflection, In-line gun,
Dot pitch 0.63 mm (BT-S1415DA/DAD)

Effective Screen Size (W x H):

280.8 mm x 210.6 mm (Min.)

Horizontal resolution:

Typical 420 TV lines

Color Temperature:

6 500 K / 9 300 K / USER selectable

Color System:

NTSC / PAL / SECAM

Audio Power Output:

1.5 W (10 % THD)

Speaker:

8 Ω, Oval (7.1 cm x 4.1 cm) x 1

Connectors:

LINE A: S-video / Video selectable

S-VIDEO IN/OUT (Mini DIN 4 pin x 2)

Y: 1 V [p-p] (75 Ω or High-impedance Auto)

C (PAL): 0.3 V [p-p] (75 Ω or High-impedance Auto)

C (NTSC): 0.286 V [p-p] (75 Ω or High-impedance Auto)

VIDEO IN/OUT (BNC x 2)

Y: 1 V [p-p] (75 Ω or High-impedance Auto)

AUDIO IN/OUT (RCA phono x 2)

0.5 V [rms] (more than 22 kΩ)

LINE B: RGB / YPbPr selectable

RGB IN/OUT (BNC x 6)

RGB: 0.7 V [p-p] (75 Ω or High-impedance Auto)

Sync on G: 1 V [p-p] (75 Ω or High-impedance Auto)

YPbPr IN/OUT (BNC x 6)

Y: 1 V [p-p] (75 Ω or High-impedance Auto)

PbPr: 0.7 V [p-p] (75 Ω or High-impedance Auto)

AUDIO IN/OUT (RCA phono x 2)

0.5 V [rms] (more than 22 kΩ)

SDI (BT-S1315DAD/S1415DAD only):

SDI IN/OUT (BNC x 2)

SMPTE259M (270 Mbps serial digital component signal)

576i/480i auto selection

Sampling frequency: Y (13.5 MHz), PbPr (6.75 MHz)

Quantization: 10 bits

Active through out

EXT SYNC IN/OUT (BNC x 2):

Composite Sync

0.3 V [p-p] - 4.0 V [p-p] (75 Ω or High-impedance Auto)

REMOTE (M3 x 1):

For remote control (aspect selection and tally lamp switch)

DC OUT (BT-S1315DA/S1415DA only):

DC 6 V, 0.7 A output for ET-SD06

Dimensions (W x D x H):

356 mm x 378 mm x 341 mm

Weight:

13.5 kg (BT-S1315DA/S1415DA)

14.0 kg (BT-S1315DAD/S1415DAD)

Operating Temperature:

0°C - 40°C

Operating Humidity:

20 % - 80 % (non-condensation)

Applied Harmonized Standards:

EN60065, EN55103-1 (E2, E4), EN55103-2 (E2, E4)

(BT-S1415DA/DAD)

Accessories:

AC power cord

Options:

Serial digital interface unit ET-SD06 (BT-S1315DA/S1415DA)

Rack mount kit BA-131

• Specifications are subject to change without notice.

• Weight and dimensions shown are approximate.

© 2000 Matsushita Electric Industrial Co., Ltd./All rights reserved. Unauthorized copying and distribution is a violation of law.

Panasonic

•@

[TOP](#) [NEXT](#)

☐ [4.13.3 Preparations](#)

☐ [4.13.4 6500K Adjustment](#)

☐ [4.13.5 9300K Adjustment](#)

☐ [4.14 SECAM Black Level](#)

[Adjustment](#)

☐ [4.14.1 Equipment to be used](#)

☐ [4.14.2 Initial Settings](#)

☐ [4.14.3 Adjustment Procedure](#)

☐ [4.15 Brightness and ABL](#)

[Adjustment](#)

☐ [4.15.1 Equipment to be used](#)

☐ [4.15.2 Initial Settings](#)

☐ [4.15.3 Adjustment Procedure](#)

☐ [4.16 Focus Adjustment](#)

☐ [4.16.1 Equipment to be used](#)

☐ [4.16.2 Initial Settings](#)

☐ [4.16.3 Adjustment Procedure](#)

☐ [4.17 C/Y Output Adjustment](#)

[\(BT-S1315DAD/S1415DAD only\)](#)

☐ [4.17.1 Equipment to be used](#)

☐ [4.17.2 Adjustment Procedure](#)

☐ [4.18 X-radiation Protection Circuit](#)

[Adjustment](#)

☐ [4.18.1 Equipment to be used](#)

☐ [4.18.2 Initial Settings](#)

☐ [4.18.3 Adjustment Procedure](#)

☐ [5 Troubleshooting](#)

☐ [5.1 The power is not turned on](#)

☐ [5.2 No raster appears](#)

☐ [5.3 The raster is a horizontal](#)

- ☐ [5.4 No picture appears](#)
- ☐ [5.5 No on-screen display appears](#)
- ☐ [5.6 No sound comes out](#)
- ☐ [6 Operating Instructions](#)
- ☐ [7 Block Diagram](#)
- ☐ [8 Schematic Diagram for Models BT-S1315DA/DAD and BT-S1415DA/DAD](#)
- ☐ [9 Schematic Diagram](#)
- ☐ [9.1 W-P.C.Board](#)
- ☐ [9.2 A-P.C.Board\(1/2\)](#)
- ☐ [9.3 A-P.C.Board\(2/2\)](#)
- ☐ [9.4 B-P.C.Board\(1/2\)](#)
- ☐ [9.5 B-P.C.Board\(2/2\)](#)
- ☐ [10 Circuit Boards](#)
- ☐ [10.1 A-P.C.Board](#)
- ☐ [10.2 B-P.C.Board/ W-P.C.Board\(Foil Side\)](#)
- ☐ [10.3 B-P.C.Board \(Component Side\)
Y/S/T/N/ Board\(Foil Side\)](#)
- ☐ [11 Exploded Views](#)
- ☐ [12 Replacement Parts List](#)

1 Safety Precautions

[TOP](#) [PREVIOUS](#) [NEXT](#)

[1.1 General Guidelines](#)

[1.2 Leakage Current Cold Check](#)

[1.3 Leakage Current Hot Check](#)

[1.4 X-Radiation](#)

[1.5 Horizontal Osc. Disable Circuit Test](#)

[1.6 Repair Procedure of Horizontal Osc. Disable Circuit](#)

•[@](#)

[TOP](#) [PREVIOUS](#) [NEXT](#)

1.1 General Guidelines

[TOP](#) [PREVIOUS](#) [NEXT](#)

It is advisable to insert an isolation transformer in the power line and AC supply before servicing a hot chassis.

When servicing this monitor, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

After the service, check that all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations are properly installed.

Before turning the monitor on, measure the resistance between B+ line and chassis ground. Connect the "-" side of an ohmmeter to each B+ line, and the "+" side to chassis ground. The resistance of each line must be higher than specified as follows:

B+ Line	Minimum Resistance
103 V	150 Ω
14.5 V	40 Ω
14.0 V	150 Ω
10.0 V	150 Ω

When the monitor is not used for a long period of time, unplug the power cord from the AC outlet.

High voltage points, as high as 23.5 kV, are present when this monitor is in operation. Operating the monitor without the rear cover involves you in a dangerous electric shock from the monitor power supply. Servicing must not be attempted by anyone who is not thoroughly familiar with the necessary precautions when working on high voltage equipment. Always discharge the anode of the picture tube to the chassis ground before handling the picture tube.

After the service, make the following leakage current checks to prevent the customer from getting an electric shock.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

1.2 Leakage Current Cold Check

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Unplug the AC power cord and connect a jumper wire between the two prongs of the AC plug.
2. Set the power switch of this monitor to the ON position.
3. Measure the resistance with an ohmmeter between the prongs of the AC plug and each exposed metallic cabinet part on the monitor such as screw heads, connectors, and control shafts. When the exposed metallic part has a return path to the chassis, the ohmmeter should read between 5 M Ω and 15 M Ω . When the exposed metallic part does not have a return path to the chassis, the reading must be infinity.

•@

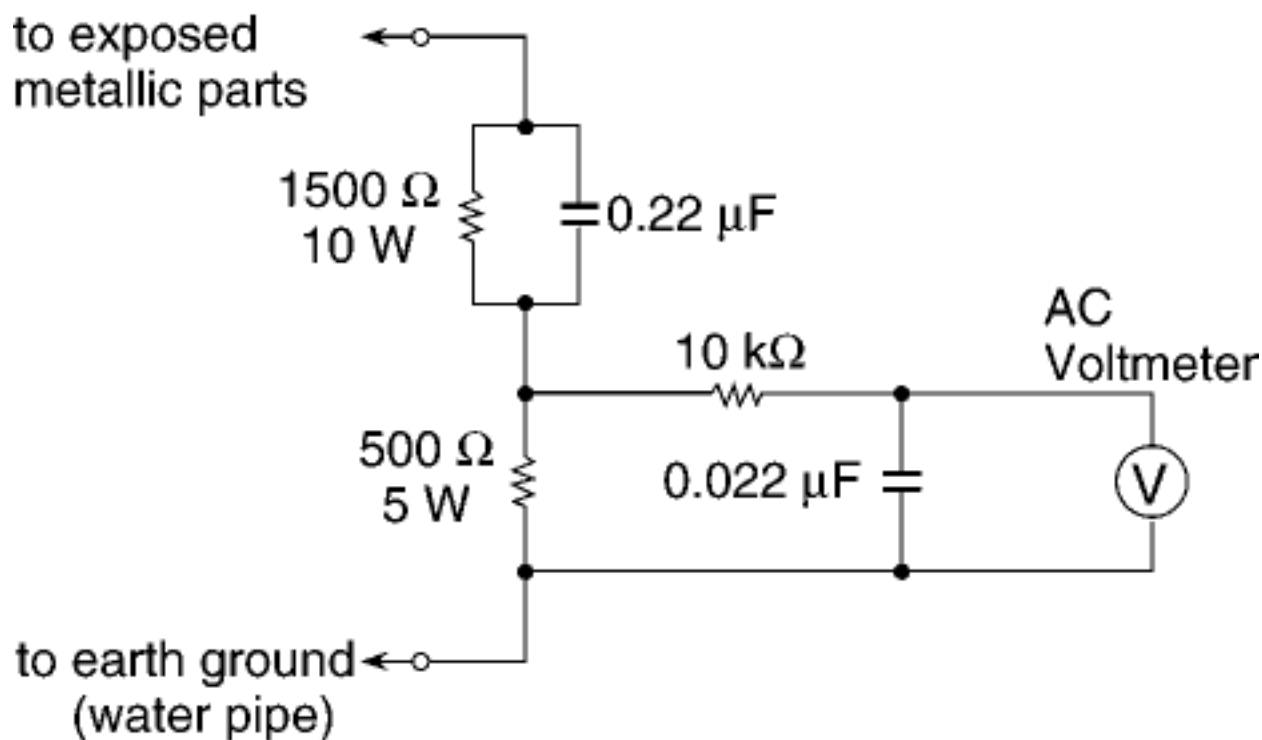
[TOP](#) [PREVIOUS](#) [NEXT](#)

1.3 Leakage Current Hot Check

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Plug the AC power cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect the test jig shown in Fig.1 between each exposed metallic part on the monitor and an earth ground such as a water pipe.
3. Use an AC voltmeter having high impedance (1 k Ω /V or higher) to measure the voltage.
4. Measure the voltage at each exposed metallic part.
5. The voltage at any point must be less than 0.25 V[rms].
6. A leakage current tester (Simpson Model 228 or equivalent) may be used to make the hot checks. In this case, the current must be less than 0.5 mA.
7. If the reading is outside of the specified limit, the monitor must be repaired and rechecked before it is returned to the customer because of a possibility of an electric shock.

Fig.1



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

1.4 X-Radiation

[TOP](#) [PREVIOUS](#) [NEXT](#)

Warnings:

The potential sources of X-Radiation in the monitor are the high voltage section and the picture tube.

When using a picture tube test jig for service, check that the jig is capable of handling 28.5 kV without causing X-Radiation.

Note:

It is important to use an accurate, periodically calibrated high-voltage meter (electrostatic type).

1. Turn the BRIGHT and CONTRAST controls counterclockwise fully.
2. Check that the high voltage is $23.5 \text{ kV} \pm 1.5 \text{ kV}$. If not, immediate service and correction is required to prevent a possibility of premature component failure.
3. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

1.5 Horizontal Osc. Disable Circuit Test

[TOP](#) [PREVIOUS](#) [NEXT](#)

This test must be made as a final check before the monitor is returned to the customer./Fig. 2 shows the horizontal osc. disable circuit.

1. With the rear cover removed, supply nominal 120 V AC for BT-S1315DA/DAD or 220 V AC for BT-S1415DA/DAD to the monitor and turn the power on.
2. Set the customer controls to normal operating positions.
3. Input a monoscope pattern signal.
4. Short R571 with a 10 k Ω jumper wire.
5. Check that the high voltage vanishes, the raster stops, and the AC power supply voltage is 120 V for BT-S1315DA/DAD or 220 V for BT-S1415DA/DAD.
6. If these do not occur, the horizontal osc. disable circuit is not operating properly. Repair this circuit according to the following procedure before returning the monitor to the customer.

•@

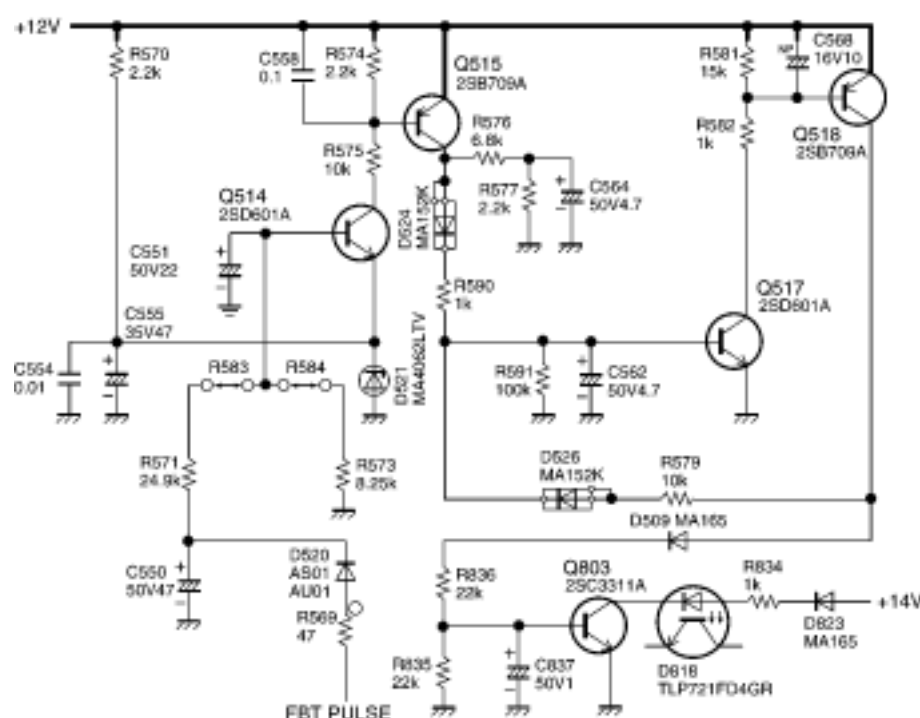
[TOP](#) [PREVIOUS](#) [NEXT](#)

1.6 Repair Procedure of Horizontal Osc. Disable Circuit

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Connect a DC voltmeter between the "+" side of C550 and a chassis ground. If the voltmeter does not read nearly 20 V, check R569, D520, C550, R571 and R573.
2. Connect the "+" side of the DC voltmeter to the collector of Q803 and the "-" side to TPA4 (GND). The collector voltage of Q803 changes from nearly 11 V to 0.1 V when R571 is shorted by 10 k Ω jumper. If this does not occur, check Q518, C568, R581, Q515, C558, R574, R575, Q514, C551, R570, D521, C554, C555, D524, R576, R582, R590, R577, C564, R591, C562, Q517, D526, R579, D509, R571, R573, C550, D520, R569, R836, R835, C837, Q803, D818, R834 and D823.
3. Carefully check the above specified parts and the related circuits and parts. When the circuit has been repaired, make the horizontal osc. disable circuit test again.

Fig.2



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

2 Disassembly Instructions

[TOP](#) [PREVIOUS](#) [NEXT](#)

Warnings:

Be sure to unplug the AC power cord from the AC power outlet before disassembling this monitor.

Cautions:

When turning over a printed circuit board, be sure to put a insulating material under it to prevent a short circuit.

Printed circuit boards and wires must not be pulled forcibly, but be handled carefully.

Connectors also must be handled carefully.

After repairing this monitor, be sure to put back the wires and connectors to the original conditions.

When removing the rear panel, take care not to damage the neck of the picture tube.

Note:

After replacing any P.C. Board with a new one, be sure to check the picture quality. If there is a problem, adjust the items related to its problem according to the chapter "Measurements and Adjustments".

[2.1 Printed Circuit Board Layout](#)

[2.2 Removal of Top Cabinet](#)

[2.3 Removal of Rear Cover](#)

[2.4 Removal of DS-P.C.Board \(for BT-S1315DAD/S1415DAD only\)](#)

[2.5 Removal of B- and W-P.C.Boards](#)

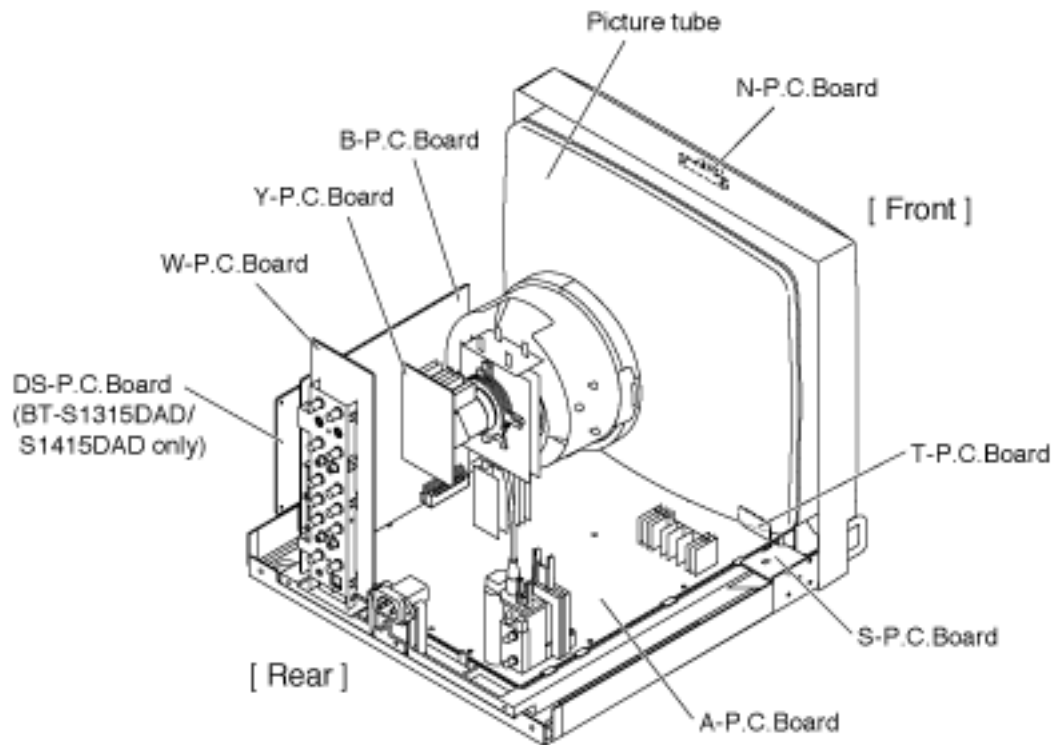
[2.6 Removal of A-P.C.Board](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

2.1 Printed Circuit Board Layout

[TOP](#) [PREVIOUS](#) [NEXT](#)



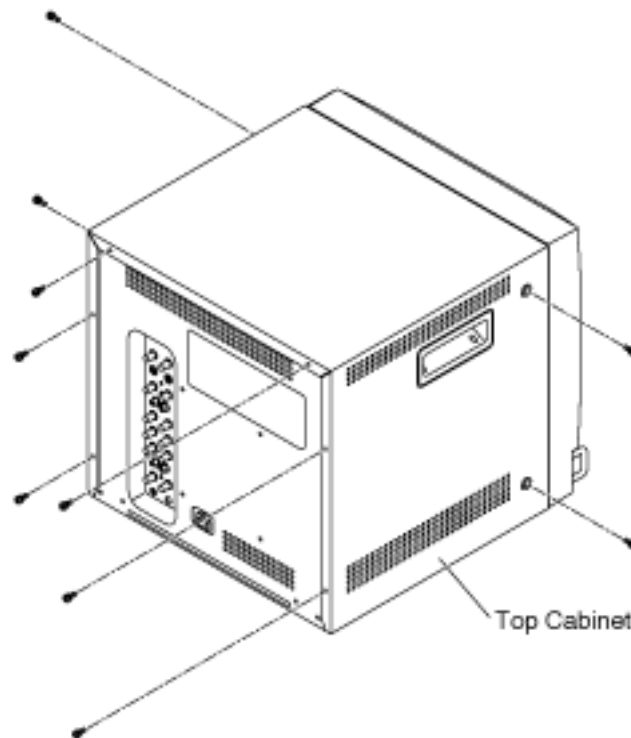
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

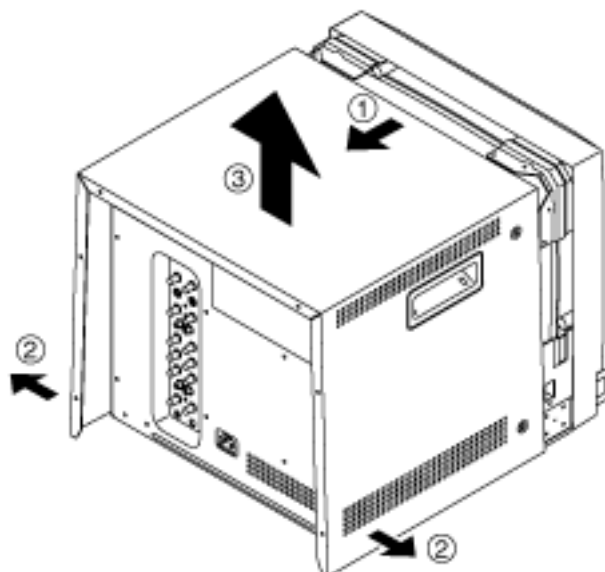
2.2 Removal of Top Cabinet

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Unscrew the 4 screws fixing the cabinet./(2 screws per side)
2. Unscrew the 6 screws fixing the cabinet.



3. After sliding the cabinet roughly 5 mm backward, lift it off while opening its bottom portions approx. 10 mm.



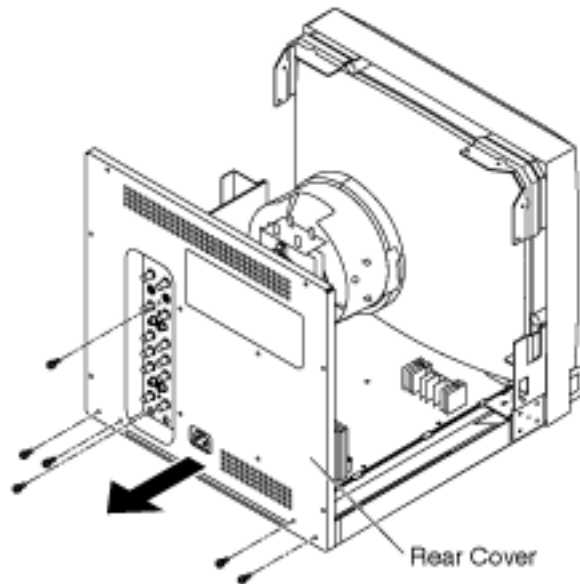
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

2.3 Removal of Rear Cover

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Unscrew the 6 screws fixing the rear cover.
2. Remove the rear cover backward.



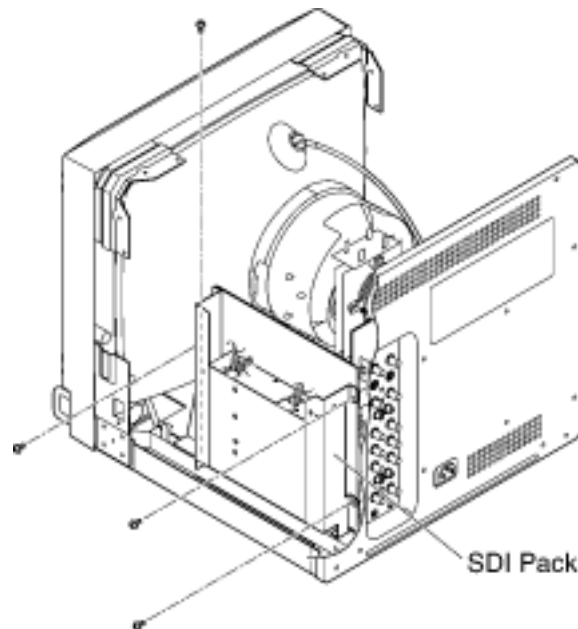
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

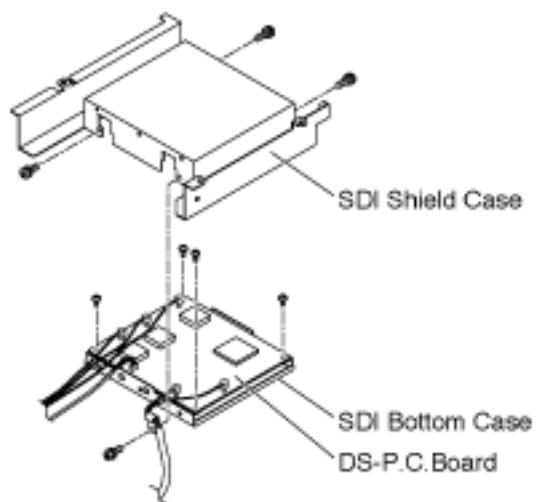
2.4 Removal of DS-P.C.Board (for BT-S1315DAD/S1415DAD only)

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Remove the top cabinet according to the section 2.2."Removal of Top Cabinet".
2. Remove the rear cover according to the section 2.3. "Removal of Rear Cover".
3. Disconnect the wires connected from other P.C.Boards to DS-P.C.Board.
4. Unscrew the 4 screws and remove the SDI pack.



5. Unscrew the 4 screws and remove the SDI shield case.
6. Unscrew the 4 screws and remove the DS-P.C.Board.



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

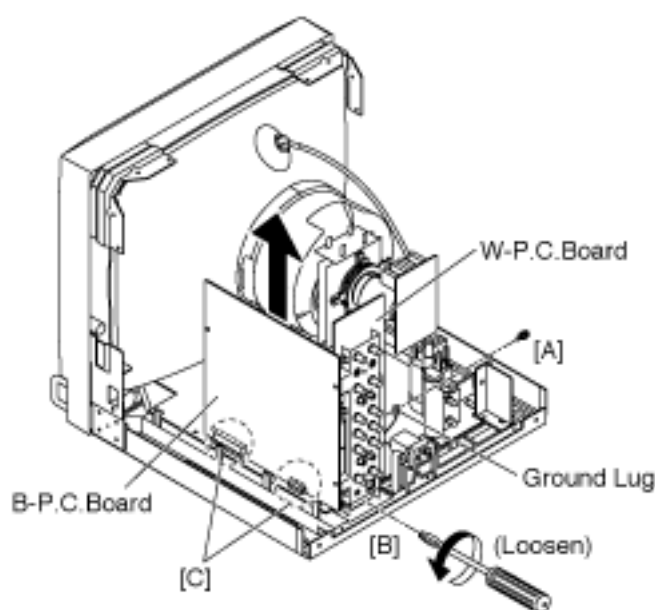
2.5 Removal of B- and/W-P.C.Boards

[TOP](#) [PREVIOUS](#) [NEXT](#)

Note:

If replacing B-P.C.Board with a new one, remove IC003 (EEPROM: TVRJ379) from the old P.C.Board and then install the removed IC on the new one.

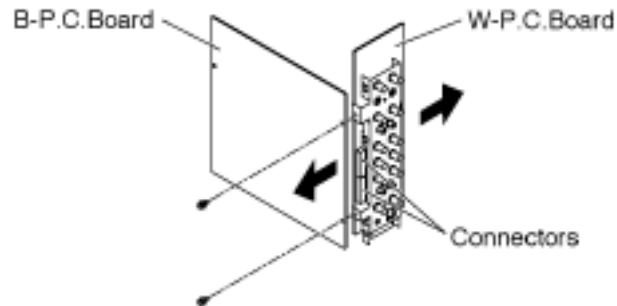
1. Remove the top cabinet according to the section 2.2. "Removal of Top Cabinet".
2. Remove the rear cover according to the section 2.3. "Removal of Rear Cover".
3. For BT-S1315DAD/S1415DAD, remove the SDI pack according to steps 3 and 4 inclusive in the section 2.4. "Removal of DS-P.C.Board".
4. Disconnect the wires connected from other P.C. Boards to B- and W-P.C.Boards.
5. Unscrew screw [A] fixing the ground lug.
6. Loosen the screw fixing W-P.C.Board. ([B] portion)
7. Disconnect the connectors between B-P.C.Board and A-P.C.Board. ([C] portion)
8. Lift off B- and W-P.C.Boards.



9. Remove the 2 screws fixing B-P.C.Board to W-P.C.Board.

Note:

10. For BT-S1315DAD/S1415DAD, these screws are already removed when removing the SDI pack.
11. Disconnect the connectors between B-P.C.Board and W-P.C.Board.



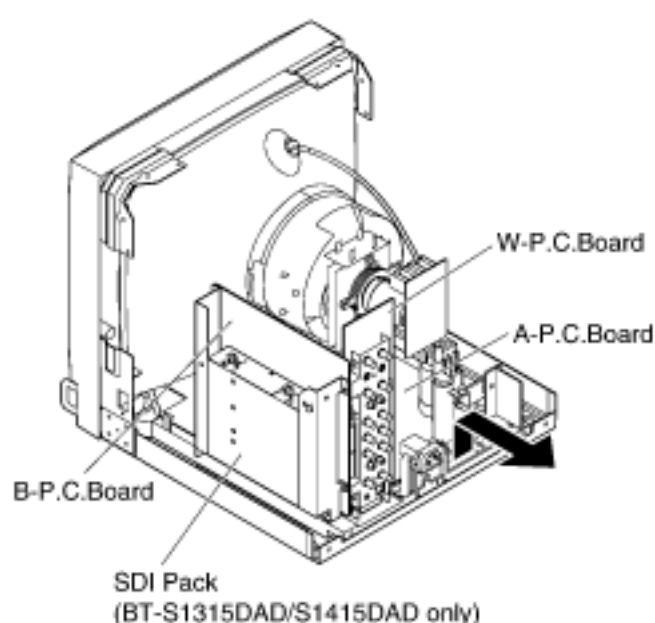
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

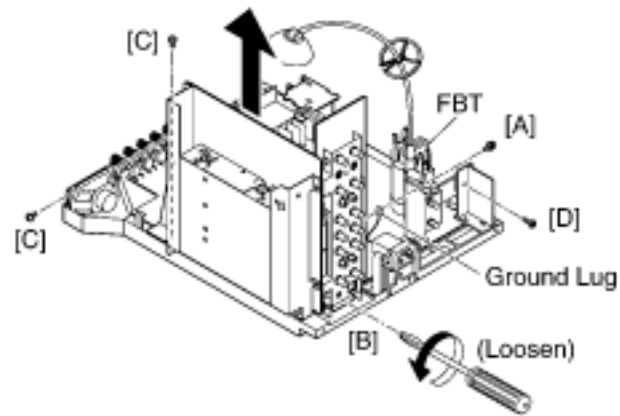
2.6 Removal of A-P.C.Board

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Remove the top cabinet according to the section 2.2. "Removal of Top Cabinet".
2. Remove the rear cover according to the section 2.3. "Removal of Rear Cover".
3. Disconnect the wires connected from other components to A- and B-P.C.Boards.
4. Slide the plastic chassis block backward while lifting its rear edge.

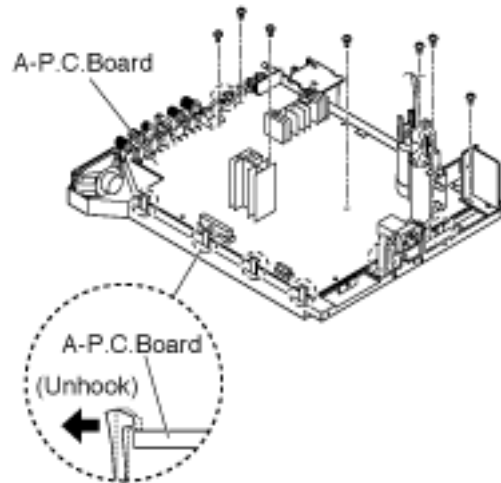


5. Unscrew screw [A] fixing the ground lug.
6. Loosen the screw fixing W-P.C.Board. ([B] portion)
7. For BT-S1315DAD/S1415DAD, unscrew 2 screws [C] fixing the SDI pack.
8. Disconnect the wires connected from B- and W-P.C.Boards to A-P.C.Board.
9. Disconnect the connectors between B-P.C.Board and/A-P.C.Board, then remove the B- and W-P.C.Boards block.
10. Unscrew the screw [D] fixing the fly-back transformer.



11. Unscrew the 7 screws fixing A-P.C.Board.

12. Unhook the hooks and remove the A-P.C.Board.



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

3 Picture Tube Replacement

[TOP](#) [PREVIOUS](#) [NEXT](#)

Caution:

Never mechanically stress the neck of the picture tube not to damage it.

[3.1 Replacement Procedure](#)

[3.2 Location of Magnets](#)

- @

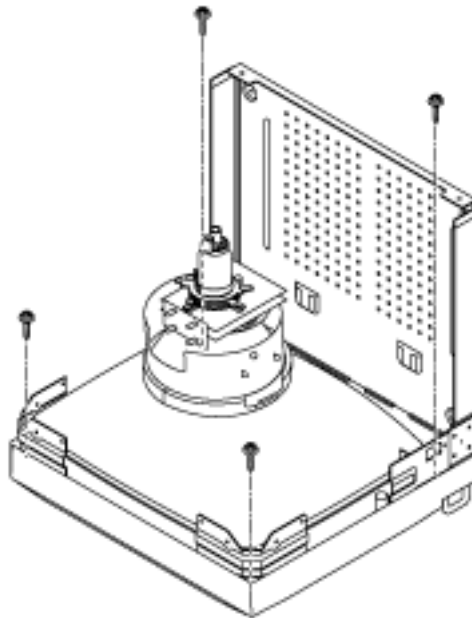
[TOP](#) [PREVIOUS](#) [NEXT](#)

3.1 Replacement Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

Removal

1. Remove the plastic chassis block according to steps 1 to 4 inclusive in the section "Removal of A-P.C.Board".
2. Disconnect the CRT socket on the Y-P.C.Board.
3. Remove the anode cap from the picture tube.
4. Unscrew the 4 screws fixing the picture tube.



Installation

Install a new picture tube by the opposite procedure of the removal.

Adjustments Required

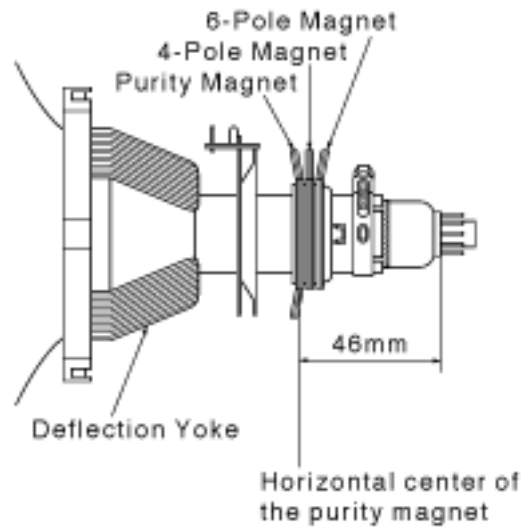
After replacing the picture tube, adjust every item in the chapter "Measurements and Adjustments".

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

3.2 Location of Magnets

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4 Measurements and Adjustments

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.1 Adjustment procedure Flowchart](#)

[4.2 Location of Test Points and Adjustment Control](#)

[4.3 Warnings](#)

[4.4 Caution](#)

[4.5 Notes](#)

[4.6 Switching between USER and FACTORY Modes](#)

[4.7 Purity Adjustment](#)

[4.7.1 Equipment to be used](#)

[4.7.2 Adjustment Procedure](#)

[4.8 Convergence Adjustment](#)

[4.8.1 Equipment to be used](#)

[4.8.2 Adjustment Procedure](#)

[4.9 Deflection Adjustment and Check](#)

[4.9.1 Equipment to be used](#)

[4.9.2 Initial Settings](#)

[4.9.3 Adjustment Procedure](#)

[4.10 Cut Off Adjustment](#)

[4.10.1 Equipment to be used](#)

[4.10.2 Initial Settings](#)

[4.10.3 Adjustment Procedure](#)

[4.11 Contrast Adjustment](#)

[4.11.1 Equipment to be used](#)

[4.11.2 Initial Settings](#)

[4.11.3 Adjustment Procedure](#)

[4.12 NTSC Color Output Adjustment](#)

[4.12.1 Equipment to be used](#)

[4.12.2 Initial Settings](#)

[4.12.3 Adjustment Procedure](#)

[4.13 White Balance Adjustment](#)

[4.13.1 Equipment to be used](#)

[4.13.2 Initial Setting](#)

[4.13.3 Preparations](#)

[4.13.4 6500K Adjustment](#)

[4.13.5 9300K Adjustment](#)

[4.14 SECAM Black Level Adjustment](#)

[4.14.1 Equipment to be used](#)

[4.14.2 Initial Settings](#)

[4.14.3 Adjustment Procedure](#)

[4.15 Brightness and ABL Adjustment](#)

[4.15.1 Equipment to be used](#)

[4.15.2 Initial Settings](#)

[4.15.3 Adjustment Procedure](#)

[4.16 Focus Adjustment](#)

[4.16.1 Equipment to be used](#)

[4.16.2 Initial Settings](#)

[4.16.3 Adjustment Procedure](#)

[4.17 C/Y Output Adjustment \(BT-S1315DAD/S1415DAD only\)](#)

[4.17.1 Equipment to be used](#)

[4.17.2 Adjustment Procedure](#)

[4.18 X-radiation Protection Circuit Adjustment](#)

[4.18.1 Equipment to be used](#)

[4.18.2 Initial Settings](#)

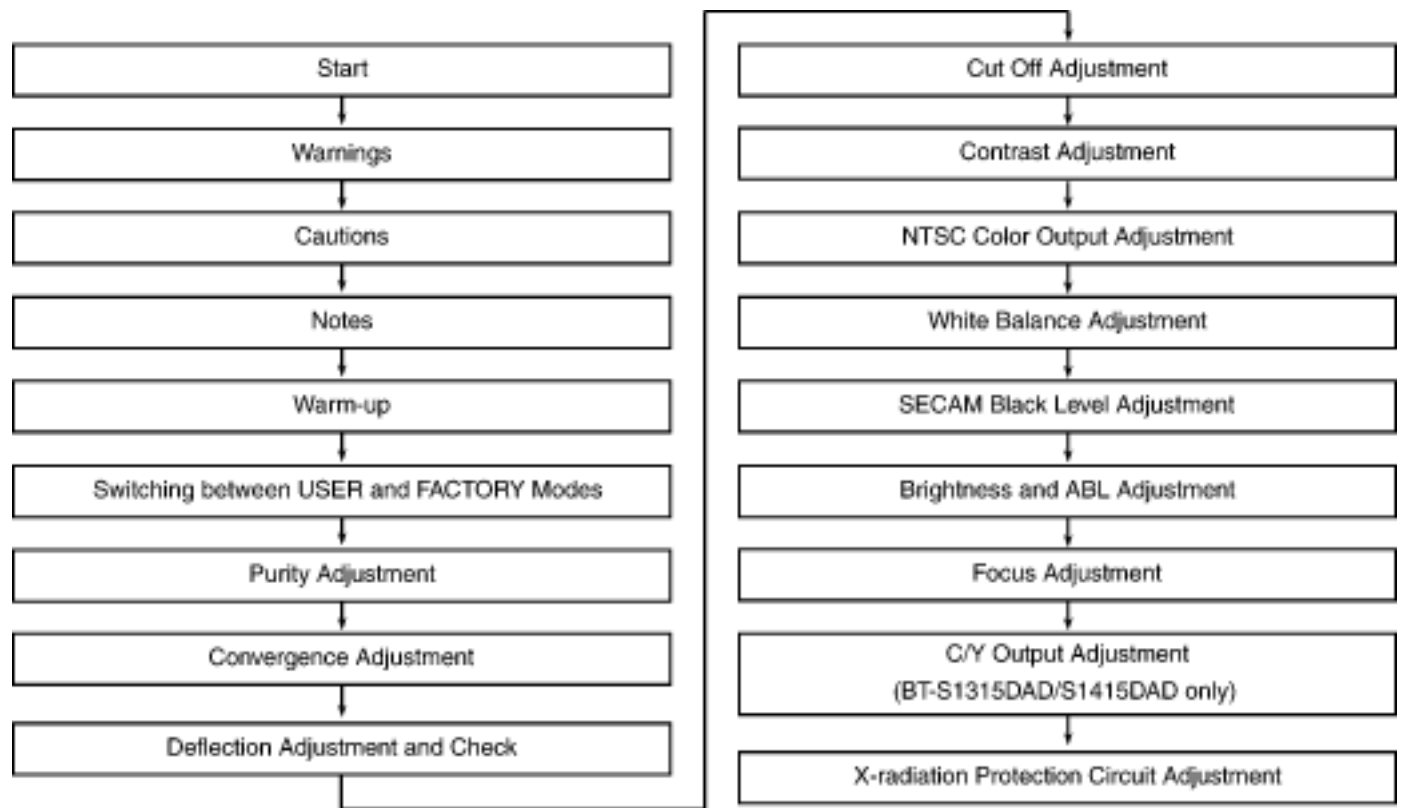
[4.18.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.1 Adjustment procedure Flowchart

[TOP](#) [PREVIOUS](#) [NEXT](#)

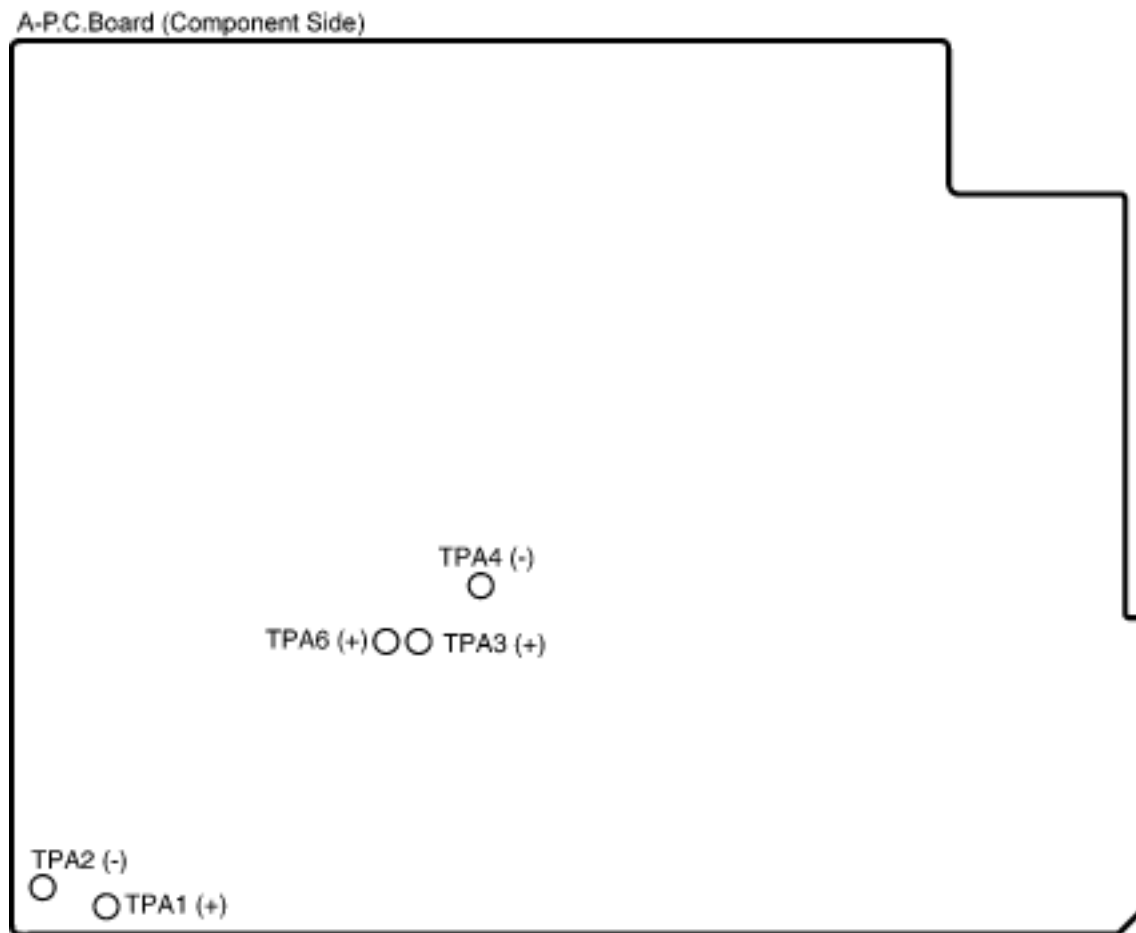


•@

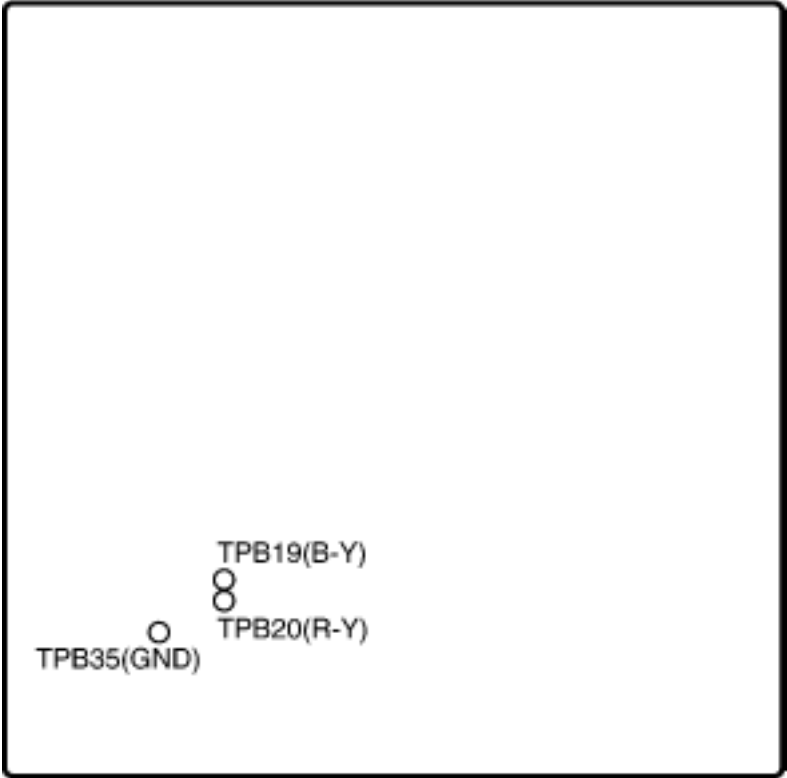
[TOP](#) [PREVIOUS](#) [NEXT](#)

4.2 Location of Test Points and Adjustment Control

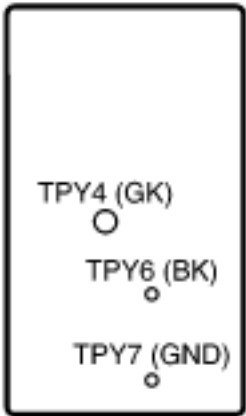
[TOP](#) [PREVIOUS](#) [NEXT](#)



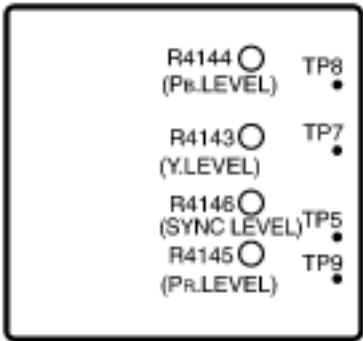
B-P.C.Board (Component Side)



Y-P.C.Board (Foil Side)

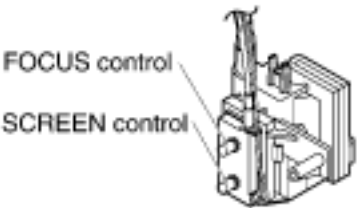


DS-P.C.Board (Component Side)
(BT-S1315/DAD/S1415DAD only)



(PB OUT)
(Y OUT)
(GND)
(PR OUT)

Fly-back Transfer



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.3 Warnings

[TOP](#) [PREVIOUS](#) [NEXT](#)

Because this set has HOT and COLD sections in the power supply circuit, never touch the HOT and COLD sections at the same time to prevent you from getting an electric shock.

Always unplug the AC power cord plug from the AC line outlet before disassembling the chassis.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.4 Caution

[TOP](#) [PREVIOUS](#) [NEXT](#)

Never short-circuit between the HOT and COLD sections to prevent damage to the components.

Never measure the HOT and COLD sections at the same time when using any measurement instrument.

When a screwdriver is needed during adjustment, use a nonmetallic screwdriver to prevent an unexpected short circuit.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.5 Notes

[TOP](#) [PREVIOUS](#) [NEXT](#)

This set needs a warm-up to stabilize each function, so operate the set to be adjusted over an hour before the adjustment.

The AC power source voltage should be 120 V \pm 2 V for BT-S1315DA/DAD or 220 V \pm 2 V for BT-S1415DA/DAD, and its distortion less than 3%.

For the color difference signals, use a Y signal having sync signals and PB and PR signals no sync signals unless otherwise specified.

Use the MENU/ENTER and Rotary switches on the front panel to select and adjust a necessary item.

For the front panel controls, refer to the Operating Instructions.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.6 Switching between USER and FACTORY Modes

[TOP](#) [PREVIOUS](#) [NEXT](#)

USER Mode→ FACTORY Mode

While pressing the SCAN switch, turn the Rotary switch 3 steps clockwise, then 1 step counterclockwise, then 3 steps clockwise, and then 1 step counterclockwise.

FACTORY Mode→ USER Mode

While pressing the SCAN switch, turn the Rotary switch 1 step clockwise, then 1 step counterclockwise, then 1 step clockwise, and then 1 step counterclockwise.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.7 Purity Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.7.1 Equipment to be used](#)

[4.7.2 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.7.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

Degaussing Coil

Microscope

RGB Signal Generator: LINE B

Digital Voltmeter: TPA1 (+) - TPA2 (-)

•*@*

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.7.2 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Set the color temperature to "6500K".
2. Fully degauss the front, both sides, and top of the picture tube with an external degaussing coil.
3. Input a crosshatch pattern signal and adjust the convergence by horizontally and vertically positioning the static convergence magnet and deflection yoke.
4. Change the input signal to a 100% white pattern signal and adjust the BRIGHT and CONTRAST controls to obtain a digital voltmeter reading of $14.3 \text{ V} \pm 0.8 \text{ V}$.
5. Adjust the purity magnet to obtain a uniform landing at each place of nearly 2 cm from the right and left screen edges. At this time, if it is difficult to obtain correct purity, finely adjust the fore-and-aft position of the deflection yoke and its tilt and fine-tune the purity magnet.

Note:

6. When adjusting the purity magnet, first set the adjustment ring with a small dilation and the other with no dilation to the same position at the top and then adjust them in symmetrical opposite directions each other.
7. Display a red pattern and check its purity.
8. Display a blue pattern and check its purity.
9. Display the 100% white pattern and check its white quality.
10. If there is a problem in steps 6 through 8, repeat steps 2 through 8 until its problem disappears.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.8 Convergence Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.8.1 Equipment to be used](#)

[4.8.2 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.8.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

RGB Signal Generator: LINE B

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.8.2 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input a crosshatch pattern signal.
2. Adjust the 4-pole magnet to merge the blue lines with the red ones in the middle section of the screen.

Note:

3. For the location of the magnets, refer to the chapter 3 Picture Tube Replacement.
4. Adjust the 6-pole magnet to merge the green lines with the red and blue ones merged in step 2 in the middle section of the screen.
5. Fine-tune the deflection yoke position to adjust the convergence in the entirety of the screen.
6. Secure the deflection yoke with 3 wedges.

Warning:

7. Never locate the wedges within 25 mm of the end of the anode pad to prevent high-voltage surges.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.9 Deflection Adjustment and Check

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.9.1 Equipment to be used](#)

[4.9.2 Initial Settings](#)

[4.9.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.9.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

PAL Signal Generator: LINE A

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.9.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.9.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input an NTSC monoscope pattern signal and check that the picture locks horizontally.
2. Set the SCAN switch to over-scanning mode (original size).
3. Set the monitor to the FACTORY mode and select DISPLAY REF from the menu.
4. Adjust H POSI and V POSI on the DISPLAY REF menu to position the center of the picture at the center on the front of the picture tube.
5. Adjust H SIZE and V SIZE on the DISPLAY REF menu to obtain a horizontal scale of 2.5 ± 0.3 and a vertical scale of 2.0 ± 0.3 as a screen size.
6. Set the SCAN switch to under-scanning mode and check that the picture is fully displayed.
7. Set the ASPECT switch to the 16:9 mode and check that the vertical screen size is $175 \text{ mm} \pm 8 \text{ mm}$.
8. Set the SCAN switch to over-scanning mode (original size) and change the input signal to a PAL Philips pattern signal.
9. Set the ASPECT switch to the 4:3 mode and check that the center of the picture is positioned at the center on the front of the picture tube.
10. Set the SCAN switch to under-scanning mode and check that the picture is fully displayed.
11. Set the ASPECT/ switch to the 16:9 mode and check that the vertical screen size is $175 \text{ mm} \pm 8 \text{ mm}$.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.10 Cut Off Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.10.1 Equipment to be used](#)

[4.10.2 Initial Settings](#)

[4.10.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.10.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

Oscilloscope: TPY4 (GK) - TPY7 (GND)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.10.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

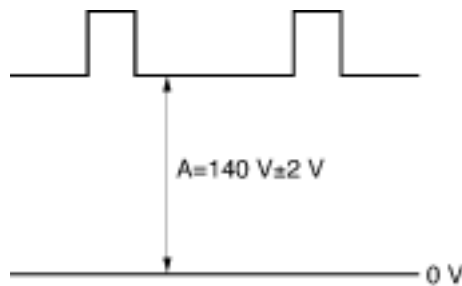
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.10.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input a crosshatch pattern signal.
2. Set the SCREEN control to its minimum.
3. To display a horizontal single line, set the monitor to the FACTORY mode, then V COMPRESS on the menu to ON, and then select MENU OFF.
4. Adjust the BRIGHT control to obtain $A=140\text{ V}\pm 2\text{ V}$.



5. Adjust the SCREEN control so that the horizontal single line can be barely visible.

Note:

6. After this adjustment, never turn the SCREEN control.
7. To cancel the horizontal single line, press the MENU/ENTER switch.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.11 Contrast Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.11.1 Equipment to be used](#)

[4.11.2 Initial Settings](#)

[4.11.3 Adjustment Procedure](#)

•*@*

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.11.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

RGB Signal Generator: LINE B

Oscilloscope: TPY4 (GK) - TPY7 (GND)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.11.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

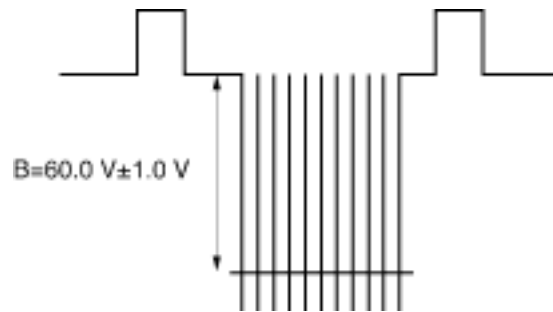
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.11.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input an NTSC crosshatch pattern signal and check that the black level is $140\text{ V} \pm 5\text{ V}$ at TPY4 (GK).
2. Set the monitor to the FACTORY mode, then select PICTURE REF from the menu, and then adjust CONTRAST on the PICTURE REF menu to obtain $B=60.0\text{ V} \pm 1.0\text{ V}$.
3. Input an RGB crosshatch pattern signal.
4. Adjust RGB-CONTRAST on the PICTURE REF menu to obtain $B=60.0\text{ V} \pm 1.0\text{ V}$.



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.12 NTSC Color Output Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.12.1 Equipment to be used](#)

[4.12.2 Initial Settings](#)

[4.12.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.12.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

PAL Signal Generator: LINE A

Oscilloscope: TPY6 (BK) - TPY7 (GND)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.12.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

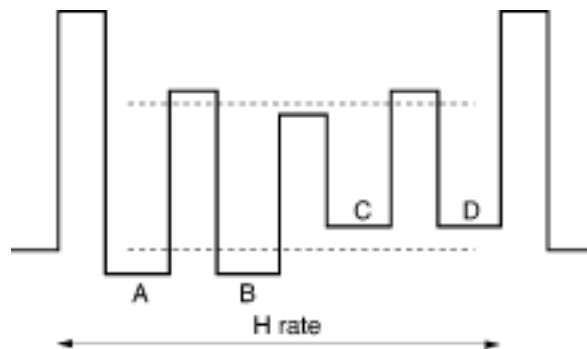
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.12.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input an NTSC full field color bar signal.
2. Set the monitor to the FACTORY mode, then select PICTURE REF from the menu, and then adjust CHROMA and PHASE on the PICTURE REF menu to align the vertical positions of A, B, C, and D of the pulse below by using the dotted lines as a guideline. At this time, adjust CHROMA for A and D and PHASE for B and C.



3. Input a PAL full field color bar signal.
4. Check that the variations of the vertical positions of A, B, C, and D are within 5 V.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.13 White Balance Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.13.1 Equipment to be used](#)

[4.13.2 Initial Setting](#)

[4.13.3 Preparations](#)

[4.13.4 6500K Adjustment](#)

[4.13.5 9300K Adjustment](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.13.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

Color Analyzer

Degaussing Coil

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.13.2 Initial Setting

[TOP](#) [PREVIOUS](#) [NEXT](#)

CHROMA: center (click position)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.13.3 Preparations

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input a window pattern signal.
2. Fully degauss the front, both sides, and top of the picture tube with an external degaussing coil.
3. Attach the light receiving element of a color analyzer to the front of the picture tube.

Note:

4. At this time, be sure not to receive extraneous light.
5. The cut off adjustment must be completed before this adjustment.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.13.4 6500K Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Set the monitor to the FACTORY mode and then COLOR TEMP on the menu to 6500K.
2. Adjust the input signal to obtain a brightness of $Y=5 \text{ nit} \pm 1.5 \text{ nit}$.
3. Adjust R-BIAS and B-BIAS to obtain a color temperature of $x=313 \pm 3$ and $y=329 \pm 3$.
4. Adjust the input signal to obtain a brightness of $Y=250 \text{ nit} \pm 20 \text{ nit}$.
5. Adjust R-GAIN and B-GAIN to obtain a color temperature of $x=313 \pm 3$ and $y=329 \pm 3$.
6. Repeat steps 2 through 5 until the color temperature becomes the specified values under the above both conditions, and complete this adjustment in step 3.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.13.5 9300K Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Set the monitor to the FACTORY mode and then COLOR TEMP on the menu to 9300K.
2. Adjust this item in a procedure similar to step 4 to obtain a color temperature of $x=281\pm3$ and $y=301\pm3$.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.14 SECAM Black Level Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.14.1 Equipment to be used](#)

[4.14.2 Initial Settings](#)

[4.14.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.14.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

SECAM Signal Generator: LINE A

Oscilloscope: TPB19 (B-Y) - TPB35 (GND) , TPB20 (R-Y) - TPB35 (GND)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.14.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

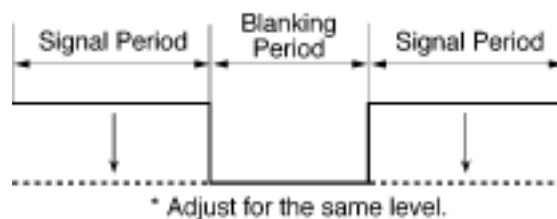
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.14.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input a SECAM color bar signal.
2. Connect an oscilloscope to TPB19 (B-Y).
3. Set the monitor to the FACTORY mode, then select PICTURE REF from the menu, and then adjust SECAM B-Y OUT on the PICTURE REF menu to level the color signal periods with the H blanking ones.
4. Change the connection of the oscilloscope to TPB20 (R-Y).
5. Adjust SECAM R-Y OUT on the PICTURE REF menu to level the color signal periods with the H blanking ones.



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.15 Brightness and ABL Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.15.1 Equipment to be used](#)

[4.15.2 Initial Settings](#)

[4.15.3 Adjustment Procedure](#)

•*@*

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.15.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

Digital Voltmeter: TPA1 (+) - TPA2 (-)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.15.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

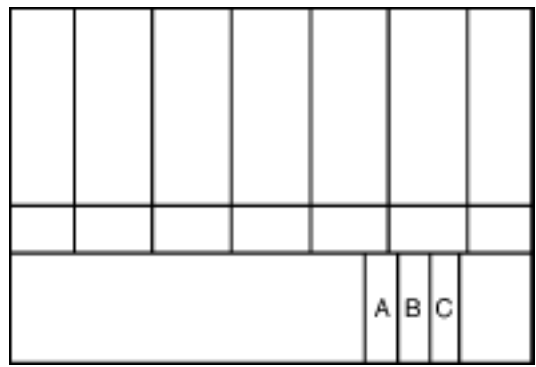
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.15.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input an SMPTE color bar signal.
2. Set the monitor to the FACTORY mode, then select PICTURE REF from the menu, and then adjust BRIGHT on the PICTURE REF menu to set the black level to the point that the B portion just starts to go down.



3. Input a monoscope pattern signal.
4. Set the BRIGHT control to the maximum and check that the digital voltmeter reads 14.3 V±0.8 V.
5. Return the BRIGHT control to the original position (click position).

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.16 Focus Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.16.1 Equipment to be used](#)

[4.16.2 Initial Settings](#)

[4.16.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.16.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

NTSC Signal Generator: LINE A

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.16.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.16.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input a monoscope pattern signal.
2. Adjust the FOCUS control to obtain correct focus in the middle and periphery of the screen.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.17 C/Y Output Adjustment (BT-S1315DAD/S1415DAD only)

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.17.1 Equipment to be used](#)

[4.17.2 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.17.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

SMPTE259M Signal Generator: SDI

Oscilloscope: TP8 (PB OUT) - TP5 (GND) , TP9 (PR OUT) - TP5 (GND) , TP7 (Y OUT) - TP5 (GND)

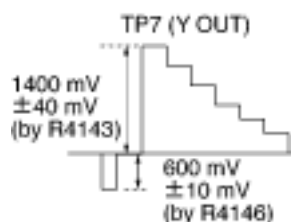
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

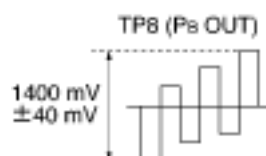
4.17.2 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

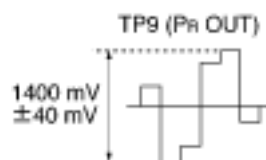
1. Input an SMPTE259M 100% color bar signal.
2. Adjust R4143 and R4146 to obtain the waveform is as the figure below.



3. Adjust R4144 to obtain the waveform is as the figure below.



4. Adjust R4145 to obtain the waveform is as the figure below.



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.18 X-radiation Protection Circuit Adjustment

[TOP](#) [PREVIOUS](#) [NEXT](#)

[4.18.1 Equipment to be used](#)

[4.18.2 Initial Settings](#)

[4.18.3 Adjustment Procedure](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.18.1 Equipment to be used

[TOP](#) [PREVIOUS](#) [NEXT](#)

PAL Signal Generator: LINE A

High-voltage Meter (Electrostatic type): picture tube anode-COLD GND

Digital Voltmeter: TPA1 (+) - TPA2 (-)

DC Power Supply (100 V -150 V): TPA6 (+) - TPA4 (-)

56 k Ω 5 W Resistor: T802 P2 side of R816 - HOT GND

Electronic Dummy Load (150 mA): TPA3 (+) - TPA4 (-)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.18.2 Initial Settings

[TOP](#) [PREVIOUS](#) [NEXT](#)

BRIGHT, PHASE, CHROMA: center (click position)

CONTRAST: maximum

VOLUME (audio): minimum

H SIZE, SCREEN control: correctly adjusted condition.

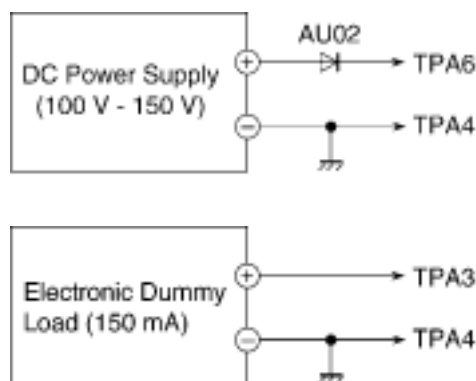
•*@*

[TOP](#) [PREVIOUS](#) [NEXT](#)

4.18.3 Adjustment Procedure

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Input a PAL black level signal.
2. Connect DC power supply (100 V - 150 V) and electronic dummy load (150 mA) as shown below.

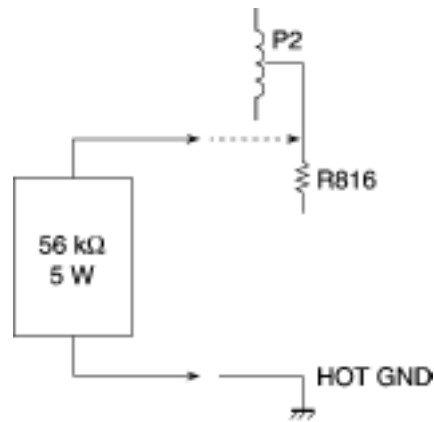


3. Turn on the monitor.
4. Set the SCAN switch to over-scanning mode (original size).
5. Set the CONTRAST and BRIGHT controls to their minimums to allow the screen to become black.
6. Check that the high voltage is $23.8 \text{ kV} \pm 1.2 \text{ kV}$.
7. Change the input signal to a Philips pattern signal.
8. Adjust the CONTRAST and BRIGHT controls to obtain a digital voltmeter reading of $7.0 \text{ V} \pm 0.05 \text{ V}$.
9. Turn on the electric dummy load and adjust it to obtain current of 150 mA.
10. Turn on the DC power supply, increase its output voltage gradually, and check that a shutdown occurs at the high voltage of $27.0 \text{ kV} \pm 1.5 \text{ kV}$ and the digital voltmeter reading of $7.0 \text{ V} \pm 0.05 \text{ V}$.

Note:

11. A shutdown means that the high voltage vanishes and the raster stops.

12. Minimize the DC power supply voltage gradually and turn it off.
13. Turn off the monitor.
14. Connect 56 k Ω / 5 W resistor as shown below.



15. Disconnect the resistor, DC power supply and electronic dummy load.
16. Turn on the monitor, then confirm it operates normally.
17. Turn off the monitor.

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

5 Troubleshooting

[TOP](#) [PREVIOUS](#) [NEXT](#)

[5.1 The power is not turned on](#)

[5.2 No raster appears](#)

[5.3 The raster is a horizontal](#)

[5.4 No picture appears](#)

[5.5 No on-screen display appears](#)

[5.6 No sound comes out](#)

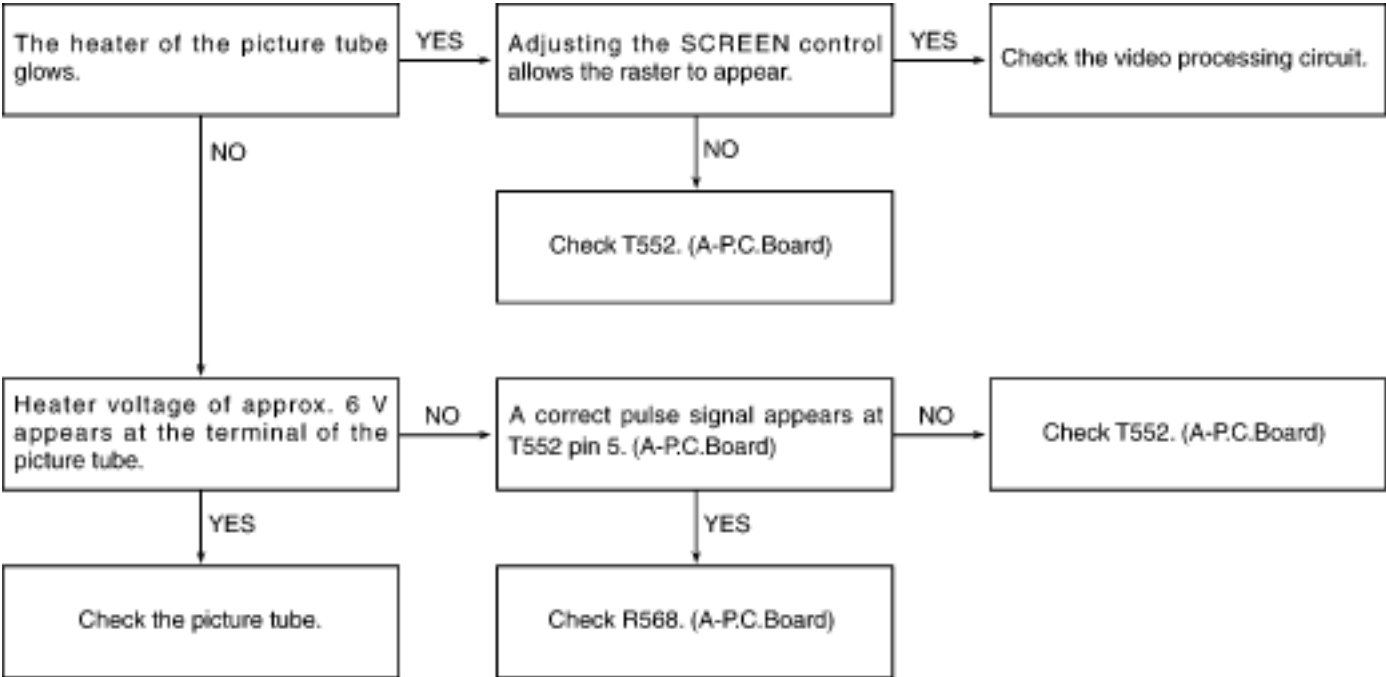
•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

[TOP](#) [PREVIOUS](#) [NEXT](#)

5.2 No raster appears

[TOP](#) [PREVIOUS](#) [NEXT](#)

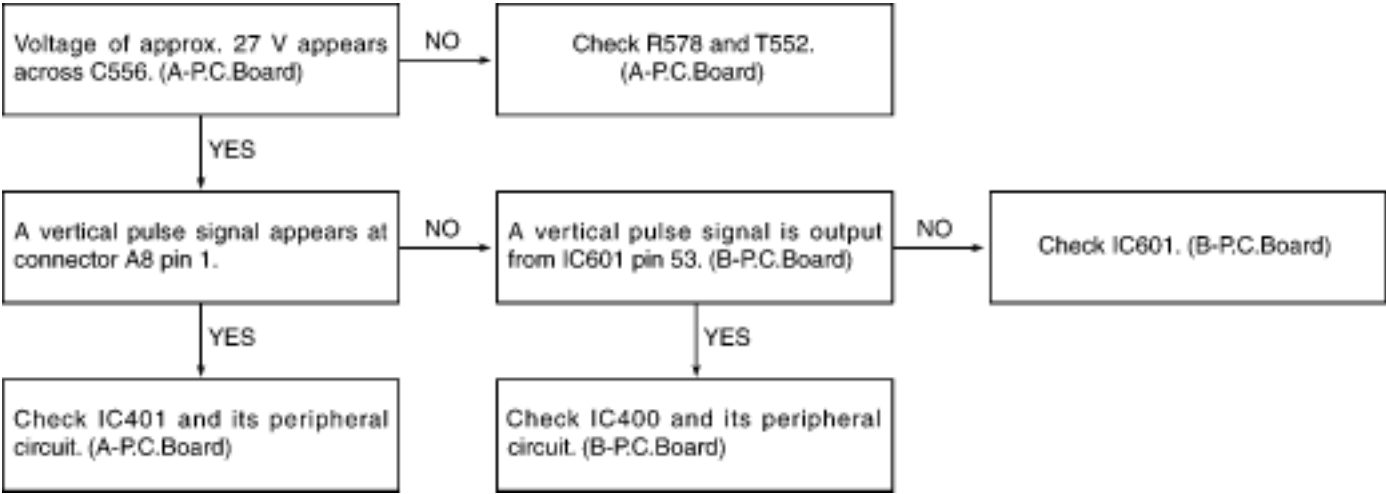


•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

5.3 The raster is a horizontal

[TOP](#) [PREVIOUS](#) [NEXT](#)

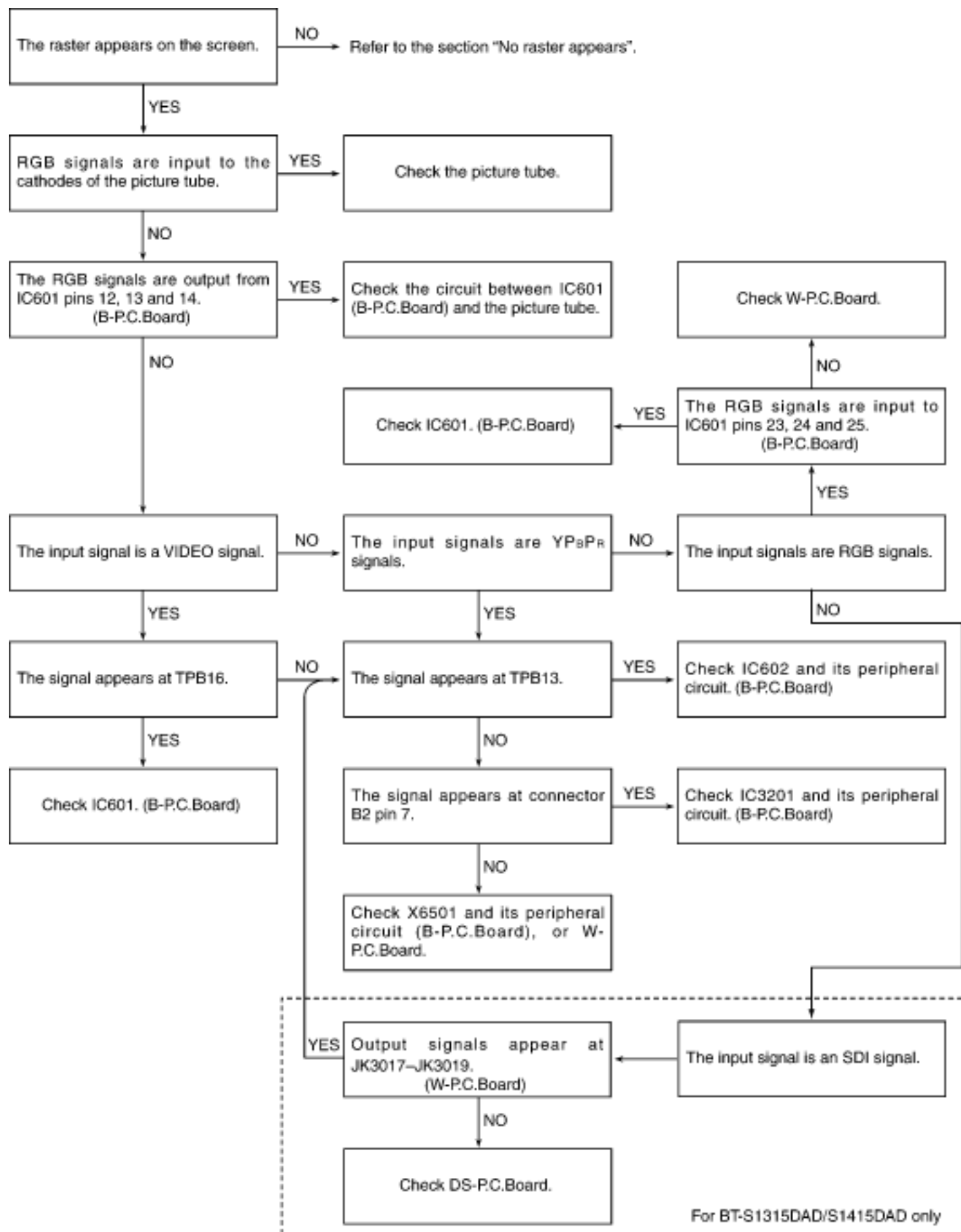


•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

5.4 No picture appears

[TOP](#) [PREVIOUS](#) [NEXT](#)

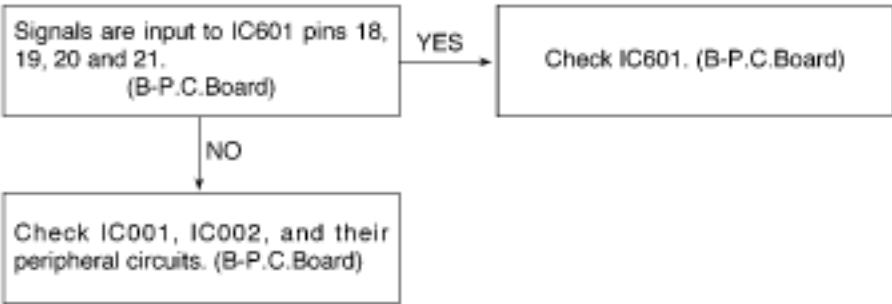


•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

5.5 No on-screen display appears

[TOP](#) [PREVIOUS](#) [NEXT](#)

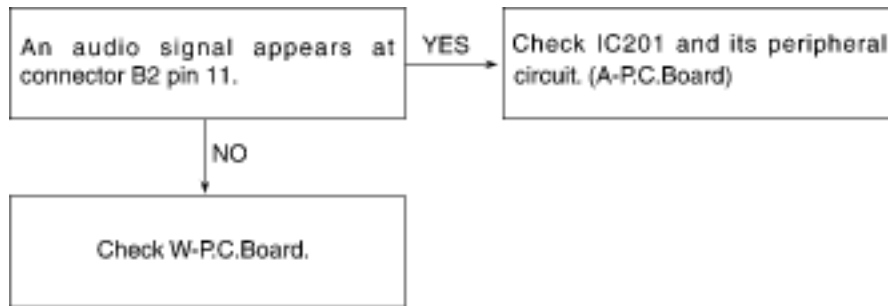


•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

5.6 No sound comes out

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

6 Operating Instructions

[TOP](#) [PREVIOUS](#) [NEXT](#)

Notes:

Because some pages in the user instruction manual for models BT-S1415DAD/BT-S1415DA are used for this chapter without change, note that the page numbers shown in the sentences of this chapter are those of the user instruction manual.

For models BT-S1315DAD/BT-S1315DA, please read this chapter to translate the model number as below.

BT-S1415DAD - BT-S1315DAD

BT-S1415DA - BT-S1315DA



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

7 Block Diagram

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

8 Schematic Diagram for Models BT-S1315DA/DAD and BT-S1415DA/DAD

[TOP](#) [PREVIOUS](#) [NEXT](#)

Schematic Diagram for Models BT-S1315DA/DAD


IMPORTANT SAFETY NOTICE


THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.


Schematic Diagram for Models BT-S1415DA/DAD


Important Safety Notice


The components identified by the international symbol  have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified ones.



- Notes:**
- 1. Resistor**
All the resistors are carbon 1/4W resistors, unless marked as follows:
The unit of resistance is an OHM [Ω] (K=1,000 M=1,000,000).
-  : Nonflammable


 : Solid


 : Wire Wound


 : Metal Oxide


 : Metal Film


 : Fuse
- 2. Capacitor**
All the capacitors are ceramic 50V capacitors, unless marked as follows:
The unit of capacitance is a μF, unless otherwise noted.
-  : Temperature Compensation


 : Polyester




 : Metalized Polyester


 : Polypropylene


 : Electrolytic

 : Bipolar

 : Dipped Tantalum

 : Z-Type
- 3. Coil**
The unit of inductance is a μH, unless otherwise noted.
- 4. Test Point**
 : Test Point
- 5. Voltage Measurement**
The voltage is measured by an electronic voltmeter receiving the studio color bar signal (LINE A : VIDEO IN) when all the customer's controls are set to the standard condition.
- 6. This schematic diagram is the latest at the time of printing and the subject to change without notice.**
-  Positive Voltage Lines

 Audio Signal

 Video Signal
- Note:**
The power Circuit board contains a circuit area using a separate power supply to isolate the ground connection. The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.
- Precautions:**
1. Never touch the hot part or the hot and cold parts at the same time, or you may get an electric shock.

2. Never short-circuit the hot and cold circuits, or the fuse may blow and the parts may break.

3. Never connect an instrument such as an oscilloscope to the hot and cold circuits simultaneously, or the fuse may below. Connect the ground of instruments to the ground of the circuit being measured.

4. Make sure to unplug the power cord from the power outlet before removing the chassis.
- 8. Color code for the links between diagrams and circuit boards**
- | From/To | To/From | Color code |
|-------------------|-------------------|------------|
| Block diagram | Schematic diagram | Magenta |
| Schematic diagram | Schematic diagram | Green |
| Schematic diagram | Circuit boards | Yellow |

Terminal guide of ICs and transistors



C2CBHF000131 100 Pin



MB90096-129 28 Pin



MC14066BF 14 Pin



MC14053BF 16 Pin



TA8859AP 16Pin



TB1237AN 56Pin



TVRJ379 8 Pin



AN5862K 13Pin



AN5265 9 Pin



LA7832 7 Pin



MN1280R 3Pin



STRF6653LF53 5 Pin



SI-3090CA 5 Pin



SI-3120CA 5 Pin



SI-8050S 5 Pin



C0EAS0000005 3 Pin



UPC2405AHF 3 Pin



2SB709A
2SB710A
2SD601AR
2SD602A



2SD2499



2SD1266A



2SA1309A
2SC3311A



2SD1266A



2SD1266A



2SC3940A



2SA19610Q0HW

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

9 Schematic Diagram

[TOP](#) [PREVIOUS](#) [NEXT](#)

[9.1 W-P.C.Board](#)

[9.2 A-P.C.Board\(1/2\)](#)

[9.3 A-P.C.Board\(2/2\)](#)

[9.4 B-P.C.Board\(1/2\)](#)

[9.5 B-P.C.Board\(2/2\)](#)

•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

9.1 W-P.C.Board

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

9.2 A-P.C.Board(1/2)

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

9.3 A-P.C.Board(2/2)

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

9.4 B-P.C.Board(1/2)

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

9.5 B-P.C.Board(2/2)

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

10 Circuit Boards

[TOP](#) [PREVIOUS](#) [NEXT](#)

[10.1 A-P.C.Board](#)

[10.2 B-P.C.Board/ W-P.C.Board\(Foil Side\)](#)

[10.3 B-P.C.Board \(Component Side\) Y/S/T/N/ Board\(Foil Side\)](#)

•*@*

[TOP](#) [PREVIOUS](#) [NEXT](#)

10.1 A-P.C.Board

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

10.2 B-P.C.Board/ W-P.C.Board(Foil Side)

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

10.3 B-P.C.Board (Component Side) Y/S/T/N/ Board(Foil Side)

[TOP](#) [PREVIOUS](#) [NEXT](#)



•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

11 Exproded Views

[TOP](#) [PREVIOUS](#) [NEXT](#)




•@

[TOP](#) [PREVIOUS](#) [NEXT](#)

12 Replacement Parts List

[TOP PREVIOUS](#)

IMPORTANT SAFETY NOTICE

Components identified by the International symbol  have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

Abbreviation of part name and description

1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W

TYPE

ALLOWANCE

TYPE	ALLOWANCE
C : Carbon	F : $\pm 1\%$
F : Fuse	G : $\pm 2\%$
M : Metal Oxide	J : $\pm 5\%$
Metal Film	K : $\pm 10\%$
S : Solid	M : $\pm 20\%$
W : Wire Wound	

2. Capacitor

Example:

ECKF1H103ZF C 0.01PF, Z, 50V



TYPE












ALLOWANCE




TYPE	ALLOWANCE
C : Ceramic	C : $\pm 0.25\text{ pF}$
E : Electrolytic	D : $\pm 0.5\text{ pF}$
P : Polyester	F : $\pm 1\text{ pF}$
PP : Polypropylene	J : $\pm 5\%$
S : Polystyrol	K : $\pm 10\%$
T : Tantalum	L : $\pm 15\%$
	M : $\pm 20\%$
	P : $+100\%, -0\%$
	Z : $+80\%, -20\%$






Note: For G * * of Ref. No., not indicate illustration of it part on "Exploded Views".






Printed circuit board assembly with mark (RTL) is no longer available after production discontinuation of the complete set.







Ref. No.	Part No.	Part Name& Description	Remarks
		MECHANICAL PARTS	
K1	A34JCD91X	PICTURE TUBE	
K2	KDY3GJB55F	DEFLECTION YOKE	
K3	TLC2042-1	CONVERGENCE YOKE	
K4	EAS7D09A	SPEAKER	
K5	TXFKA01NERZ	TOP CABINET ASSY	S1415DAD,S1415DA
	TXFKA01NESZ	TOP CABINET ASSY	S1315DAD,S1315DA
K6	TKK69279-5	HANDEL	
K7	TKRA20001	ANGLE	
K8	TKUX04401	REAR COVER	
K9	TXFKC01NERZ	BOTTOM COVER ASSY	
K10	TTEA0037	ESCUTCHEON ASSY	
K11	TBXA22501	CONTROL KNOB	
K12	TBX8780500	POWER BUTTON	
K13	VGU5285-1	VR KNOB	
K14	TUC24557-1	SHELD CASE	
K15	TMX13936	DY SAPOOTE BRAKET	










G2	TBMD861	MODEL NAME PLATE	 S1415DAD
G3	TBMD908	MODEL NAME PLATE	 S1415DA
G4	TBMD950	MODEL NAME PLATE	 S1315DAD
G5	TBMD951	MODEL NAME PLATE	 S1315DA
G6	TBMU094	TERMINAL PLATE	 S1415DAD,S1315DAD
G7	TBMU103	TERMINAL PLATE	 S1415DA,S1315DA
G8	TES1208	SPRING	
K16	THT1064	CRT SCREW	
K17	TJS118070	AC INLET	
G9	TJS8A4370	BNC TERMINAL	S1415DAD,S1315DAD
K18	TMM15404-1	SPACER RING	
G10	TMM16452	CLAMPER	
G11	TMM16497-1	CLAMPER	
K19	TMM27523X	RUBBER(WEDGE)	
G12	TMM5402-1	CLAMPER	
G13	TMM6428-1	CLAMPER	
G14	TMM6434	PLASTIC SPACER	
G15	TMM6463-1	CLAMPER	
G16	TMM7464-2	CLAMPER	
G17	TMM76416-1	CLAMPER	
G18	TMM81416	CORD BAND (SMALL)	
G19	TPCA91501	CARTON	S1415DAD
G20	TPCA94001	CARTON	S1415DA
G21	TPCA91502	CARTON	S1315DAD
G22	TPCA94002	CARTON	S1315DA
G23	TPDA0423	CUSHION	
G24	TPDA0424	CUSHION	
G25	TPDF0526	AC CORD CARTON	
G26	TPEH004-2	SET COVER	
G27	TQBJ0063	INSTRUCTION BOOK	S1415DAD,S1415DA
G28	TQBJ0065	INSTRUCTION BOOK	S1315DAD,S1315DA
K20	TSX8484	AC POWER CORD (Continental)	 S1415DAD,S1415DA
K21	TSX3105-1	AC POWER CORD (U.K)	 S1415DAD,S1415DA
K22	TSXA133	AC POWER CORD (USA)	 S1315DAD,S1315DA
G29	XTS3+10A	SCREW	
G30	XTW3+10T	SCREW	


G31	XYA4+EF8	SCREW	
<u>K23</u>	XYA4+EJ12FZ	SCREW	
G32	XYE3+EF6FZ	SCREW	S1415DAD,S1315DAD
G33	XYN3+F10	SCREW	
G34	XYN3+F12	SCREW	
G35	XYN3+F6	SCREW	
		INTEGRATED CIRCUITS	
IC001	C2CBHF000131	IC	
IC002	MB90096-129	MOS IC (MICOM LSI)	
IC003	TVRJ379	IC	
IC004	MN1280R	MOS IC (MICON LSI)	
IC201	AN5265	LINEAR IC	
IC351	TDA6103Q-N3	IC	
IC400	TA8859AP	LINEAR IC	
IC401	LA7832	IC	
IC601	TB1237AN	LINEAR IC	
IC602	MC14053BF	MOS IC(CMOS S/LOGIC)	
IC603	AN5862K	LINEAR IC	
IC801	STRF6653LF53	LINEAR IC	
IC802	C0EAS0000005	IC	
IC803	UPC2405AHF	LINEAR IC	
IC804	SI-3090CA	HYBRID IC	
IC805	SI-8050S	HYBRID IC	
IC806	SI-3120CA	HYBRID IC	
IC3001,02	MC14053BF	MOS IC(CMOS S/LOGIC)	
IC3003	MC14066BF	MOS IC(CMOS S/LOGIC)	
IC3101	MC14053BF	MOS IC(CMOS S/LOGIC)	S1415DAD,S1315DAD
IC3201	MC14053BF	MOS IC(CMOS S/LOGIC)	
		TRANSISTORS	
Q001-04	2SD601AR	TRANSISTOR	
Q005	2SB709A	TRANSISTOR	
Q006	2SD601AR	TRANSISTOR	
Q009	2SD601AR	TRANSISTOR	
Q080,81	2SD601AR	TRANSISTOR	
Q202	2SD601AR	TRANSISTOR	

Q301	2SB710A	TRANSISTOR	
Q401,02	2SD601AR	TRANSISTOR	
Q409	2SD601AR	TRANSISTOR	
Q412,13	2SD601AR	TRANSISTOR	
Q512	2SD1266APLB	TRANSISTOR	
Q513	2SA1309A	TRANSISTOR	
Q514	2SD601AR	TRANSISTOR	
Q515	2SB709A	TRANSISTOR	
Q517	2SD601AR	TRANSISTOR	
Q518	2SB709A	TRANSISTOR	
Q520	2SD601AR	TRANSISTOR	
Q521	2SB709A	TRANSISTOR	
Q551	2SC3940A	TRANSISTOR	
Q552	2SD2499	TRANSISTOR	
Q600	2SB709A	TRANSISTOR	
Q602-04	2SD601AR	TRANSISTOR	
Q605	2SB709A	TRANSISTOR	
Q606	2SD602A-R	TRANSISTOR	
Q607	2SB709A	TRANSISTOR	
Q608	2SD602A-R	TRANSISTOR	
Q609	2SB709A	TRANSISTOR	
Q610	2SD602A-R	TRANSISTOR	
Q611	2SD601AR	TRANSISTOR	
Q621,22	2SD601AR	TRANSISTOR	
Q633	2SB709A	TRANSISTOR	
Q634-36	2SD601AR	TRANSISTOR	
Q637	2SB709A	TRANSISTOR	
Q638,39	2SD601AR	TRANSISTOR	
Q801	2SA1309A	TRANSISTOR	
Q802	2SA19610Q0HW	TRANSISTOR	
Q803	2SC3311A	TRANSISTOR	
Q804	2SB709A	TRANSISTOR	
Q3001-07	2SD601AR	TRANSISTOR	
Q3009-13	2SD601AR	TRANSISTOR	
Q3014	2SB710A	TRANSISTOR	
Q3015	2SD601AR	TRANSISTOR	
Q3016	2SB710A	TRANSISTOR	
Q3017-20	2SD601AR	TRANSISTOR	



Q3022,23	2SD601AR	TRANSISTOR	
Q3102-05	2SD601AR	TRANSISTOR	S1415DAD,S1315DAD
Q3106	2SB710A	TRANSISTOR	S1415DAD,S1315DAD
Q3206	2SD601AR	TRANSISTOR	
Q6501	2SD601AR	TRANSISTOR	
Q6502	2SB709A	TRANSISTOR	
Q6503	2SD601A	TRANSISTOR	
		DIODES	
D001	LN31GPH	LED (GREEN)	
D012	MA152K	DIODE	
D302,03	MA152K	DIODE	
D304-06	MA165	DIODE	
D310	MA4068L	ZENER DIODE	
D357	MA4150	ZENER DIODE	
D360-62	ERA22-04	DIODE	
D412	MA3150M	DIODE	
D414	MA152K	DIODE	
D415	MA165	DIODE	
D416-18	MA152K	DIODE	
D419	TVSEM1Z	DIODE	
D420-22	MA4390	ZENER DIODE	
D423	MA152K	DIODE	
D430	MA165	DIODE	
D431	MA152K	DIODE	
D506	MA165	DIODE	
D508	MA171	DIODE	
D509	MA165	DIODE	
D513	ERD07-15	DIODE	
D514	RU2AM	DIODE	
D517	MA29W-A	DIODE	
D518	MA165	DIODE	
D519	MA4150M	ZENER DIODE	
D520	AS01A	DIODE	
D521	MA4062L	ZENER DIODE	
D523	EU02A	DIODE	
D524	MA152K	DIODE	






D526	MA152K	DIODE	
D527	AS01A	DIODE	
D541	MA4270H	ZENER DIODE	
D556	MA182	DIODE	
D600	MA3082L	ZENER DIODE	
D601,02	MA4068M	ZENER DIODE	
D603	MA4091M	ZENER DIODE	
D605	MA152K	DIODE	
D801	ERZV14D821	VARISTOR	 S1415DAD,S1415DA
D802	D4SB80Z	DIODE	
D807	ERA15-04	DIODE	
D811	TMPG10G3	DIODE	
D812-14	AG01	DIODE	
D815	MA1068M	ZENER DIODE	
D816	MA1082M	ZENER DIODE	
D817,18	TLP721FD4GR	PHOTO COUPLER	
D819	RU30A	DIODE	
D820	TVSRU3N	DIODE	
D821	RL4Z	DIODE	
D822	TVSRU3N	DIODE	
D823,24	MA165	DIODE	
D826	MA165	DIODE	
D827	TRPW5B0N120D	POSISTOR	 S1415DAD,S1415DA
D827	TRPW5B0M050D	POSISTOR	 S1315DAD,S1315DA
D828	AK04	DIODE	
D829	MA3100	ZENER DIODE	
D830	MA165	DIODE	
D831	MA4020L	DIODE	
D832,33	AU02	DIODE	
D834	MA4062M	ZENER DIODE	
D835	MA152K	DIODE	
D836	MA4091M	ZENER DIODE	
D837	MA152K	DIODE	
D838	MA4062M	ZENER DIODE	
D839	MA152K	DIODE	
D840	MA165	DIODE	
D841	MA4062L	ZENER DIODE	















D842	MA165	DIODE	
D850	TVSRU3N	DIODE	
D851	MA165	DIODE	
D1001-04	LN81RPH	LED (ORANGE)	
D3001-08	MA152K	DIODE	
D3102-06	MA152K	DIODE	S1415DAD,S1315DAD
D3107	MA152K	DIODE	
		COILS	
L201	ELEIE470KA	PEAKING COIL	
L402	TLT101J991K	PEAKING COIL	
L501	ELH5L7122	LINEARITY COIL	
L503	ELC16B821L	CHOKE COIL	
L552	ELEIE682KA	CHOKE COIL	
L602	TLT220J991K	PEAKING COIL	
L603	ELESE121JA	PEAKING COIL	
L604	TLT180J991K	PEAKING COIL	
L605	TLT100J991K	PEAKING COIL	
L606	TLT330J991K	PEAKING COIL	
L801	TSPA072	DEGAUSSING COIL	 S1415DAD,S1415DA
L801	TLK139023N	DEGAUSSING COIL	 S1315DAD,S1315DA
L802	ELF18D650H	LINE FILTER	 S1415DAD,S1415DA
L802	ELF18D656K	LINE FILTER	 S1315DAD,S1315DA
L803	ETQR29C003A	CHOKE COIL	 S1415DAD,S1415DA
L804	EXCELSA35	BEAD CHOKE	
L805	EXCELD35C	CORE	
L806	EXCELSA39	BEAD CHOKE	
L807-09	EXCELSA35	BEAD CHOKE	
L812	ELEIE101KA	PEAKING COIL	
L814	TAL10RP151LB	CHOKE COIL	
L6501	TLT390K991K	PEAKING COIL	
		TRANSFORMERS	
T551	ETH09K7AZ	H DRIVE TRANS	
T552	KFT2AE298F	FLYBACK TRANS	

T802	ETS33AC4B6NC	SWITCHING TRANS	
		RESISTORS	
R001-03	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R004	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R008,09	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R011	ERJ6GEY0R00	M 0 OHM,J,1/10W	
R012-15	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R016	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R017	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R018	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R019	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R020	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R021	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R022	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R023,24	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R025	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R026,27	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R028,29	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R030-33	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R034	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R035	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R036	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R037	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R042	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R046	ERJ6GEYJ333	M 33KOHM,J,1/10W	
R047	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R048	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R050	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R054-58	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R060,61	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R062	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R063-66	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R067	ERJ6GEYJ471	M 470 OHM,J,1/10W	
R068	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R069	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R070	ERJ6GEYJ471	M 470 OHM,J,1/10W	
R071-79	ERJ6GEYJ473	M 47KOHM,J,1/10W	



R080-82	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R083	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R084	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R085,86	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R088,89	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R090	ERJ6GEYJ471	M 470 OHM,J,1/10W	
R091	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R092	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R093,94	ERJ6GEYJ151	M 150 OHM,J,1/10W	
R095-101	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R103	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R105,06	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R107	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R108,09	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R110-12	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R113-19	ERJ6GEYJ220	M 22 OHM,J,1/10W	
R120	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R121-24	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R125	ERJ6GEYJ121	M 120 OHM,J,1/10W	
R126	ERJ6GEYJ181	M 180 OHM,J,1/10W	
R128	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R129	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R131,32	ERJ6GEY0R00	M 0 OHM,J,1/10W	
R133-37	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R138-40	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R141	ERJ6GEYJ471	M 470 OHM,J,1/10W	
R142	ERJ6GEY0R00	M 0 OHM,J,1/10W	
R143	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R144	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R145,46	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R150	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R151	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R201	ERDS2TJ4R7	C 4.7 OHM, J,1/4W	
R202	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R203	ERJ6GEYJ822	M 8.2KOHM,J,1/10W	
R204	ERJ6GEYJ821	M 820 OHM,J,1/10W	
R205	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R206	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R208	ERJ6GEYJ103	M 10KOHM,J,1/10W	



R214	ERQ2CJP120S	F 12 OHM, J, 2W	
R215	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R220	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R221	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R302	ERDS2TJ101	C 100 OHM, J,1/4W	
R303	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R351-53	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R354	ERJ6ENF3301	M 3.3KOHM, 1/10W	
R355	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R356	ERJ6ENF1201	M 1.2KOHM, 1/10W	
R357	ER0S2CKF1001	M 1KOHM, F,1/4W	
R361	ER0S2CKF4701	M 4.7KOHM, F,1/4W	
R362	ERJ6ENF1201	M 1.2KOHM, 1/10W	
R363-65	ERC12GK332	S 3.3KOHM, K,1/2W	
R366-68	ERDS1TJ683	C 68KOHM, J,1/2W	
R371	ERJ6ENF1001	M 1KOHM, 1/10W	
R372	ER0S2CKF1001	M 1KOHM, F,1/4W	
R374	ERQ12AJ101	F 100 OHM, J,1/2W	
R400	ERDS2TJ155	C 1.5MOHM, J,1/4W	
R401	ERDS2TJ273	C 27KOHM, J,1/4W	
R402	ERJ6GEYJ151	M 150 OHM,J,1/10W	
R403	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R404	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R405-07	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R408	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R409	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R411	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R412	ERJ6GEYJ272	M 2.7KOHM,J,1/10W	
R413	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R422	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R428	ERDS2TJ1R0	C 1 OHM, J,1/4W	
R429	ERDS2TJ331	C 330 OHM, J,1/4W	
R430	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R431	ERJ6GEYJ823	M 82KOHM,J,1/10W	
R432	ERDS2TJ223	C 22KOHM, J,1/4W	
R433	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	
R434	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R435,36	ERDS2TJ102	C 1KOHM, J,1/4W	

R437	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R438,39	ERDS2TJ471	C 470 OHM, J,1/4W	
R444	ERDS2TJ222	C 2.2KOHM, J,1/4W	
R445	ERDS2TJ103	C 10KOHM, J,1/4W	
R446	ERDS2TJ223	C 22KOHM, J,1/4W	
R448	ERDS2TJ103	C 10KOHM, J,1/4W	
R449	ERDS2TJ563	C 56KOHM, J,1/4W	
R450	ERDS1FJ1R5	C 1.5 OHM, J,1/2W	
R453	ERDS2TJ394	C 390KOHM, J,1/4W	
R454	ERDS2TJ224	C 220KOHM, J,1/4W	
R455	ERDS2TJ122	C 1.2KOHM, J,1/4W	
R459	ERDS1FJ391	C 390 OHM, J,1/2W	
R461-63	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R464,65	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R467,68	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R501	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R502	ERJ6ENF8200	M 820 OHM, 1/10W	
R503	ERJ6ENF9531	M 9.53KOHM, 1/10W	
R504	ERJ6GEYJ471	M 470 OHM,J,1/10W	
R508	ERJ6GEYJ272	M 2.7KOHM,J,1/10W	
R510	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R513	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R514	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R515	ERDS2TJ752	C 7.5KOHM, J,1/4W	
R521	ERDS2TJ101	C 100 OHM, J,1/4W	
R522	ERDS2TJ153	C 15KOHM, J,1/4W	
R535	ERDS1TJ301	C 300 OHM, J,1/2W	
R539	ERDS2TJ101	C 100 OHM, J,1/4W	
R542	ERDS2TJ151	C 150 OHM, J,1/4W	
R543	ERG2FJS330D	M 33 OHM, J, 2W	
R549	ERDS1TJ102	C 1KOHM, J,1/2W	
R550	ERDS1FJ201	C 200 OHM, J,1/2W	
R552	ERG1FJS680D	M 68 OHM, J, 1W	
R558	ERQ2CJP102S	F 1KOHM, J, 2W	
R559	ERG1SJ471P	M 470 OHM, J, 1W	
R560	ERQ2CJP390S	F 39 OHM, J, 2W	
R561	ERDS2TJ222	C 2.2KOHM, J,1/4W	
R562	ERDS2TJ102	C 1KOHM, J,1/4W	

R563	ERDS2TJ271	C 270 OHM, J,1/4W	
R564,65	ERDS2TJ223	C 22KOHM, J,1/4W	
R566	ERDS2TJ682	C 6.8KOHM, J,1/4W	
R568	ERQ1CJP3R3S	F 3.3 OHM, J 1W	
R569	ERD25FJ470	C 47 OHM, J,1/4W	
R570	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R571	EROS2CKF2492	M 24.9KOHM, F,1/4W	
R573	ER0S2CKF8251	M 8.25KOHM, F,1/4W	
R574	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R575	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R576	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R577	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R578	ERD50FJ1R0	C 1 OHM, J,1/2W	
R579	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R581	ERJ6GEYJ153	M 15KOHM,J,1/10W	
R582	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R588	ER0S2CKF1503	M 150KOHM, F,1/4W	
R589	ER0S2CKF1103	M 110KOHM, F,1/4W	
R590	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R591	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R592	ERDS2TJ223	C 22KOHM, J,1/4W	
R593	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R595	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R596	ERJ6ENF1003	M 100KOHM, 1/10W	
R597,98	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R600,01	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R602	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
R604	ERJ6GEYJ183	M 18KOHM,J,1/10W	
R606	ERJ6ENF5102	M 51KOHM, 1/10W	
R607	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R610	ERDS2TJ271	C 270 OHM, J,1/4W	
R611	ERJ6GEYJ151	M 150 OHM,J,1/10W	
R615-17	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R625	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R627	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R628	ERJ6ENF4700	M 470 OHM, 1/10W	
R629	ERJ6GEYJ470	M 47 OHM,J,1/10W	

R630	ERJ6ENF4700	M 470 OHM, 1/10W	
R631	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R632	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R633	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R634	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R635	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R636	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R637	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R638	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R639,40	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R641	ERJ6GEYJ152	M 1.5KOHM,J,1/10W	
R642-44	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R645-47	ERJ6GEYJ181	M 180 OHM,J,1/10W	
R648	ERJ6GEYJ152	M 1.5KOHM,J,1/10W	
R649	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R651-53	ERJ6GEYJ821	M 820 OHM,J,1/10W	
R654-59	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R660	ERJ6GEYJ681	M 680 OHM,J,1/10W	
R661	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R662	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R663	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R665	ERJ6GEYJ680	M 68 OHM,J,1/10W	
R666,67	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R668	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R669	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R670	ERJ6GEYJ393	M 39KOHM,J,1/10W	
R671	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R672	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R673	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R674	ERJ6GEYJ104	M 100KOHM,J,1/10W	
R675	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R676	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R677	ERJ6GEYJ391	M 390 OHM,J,1/10W	
R678	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R679	ERJ6GEYJ681	M 680 OHM,J,1/10W	
R680	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R681	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R683	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R684-87	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	

R689	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R690	ERJ6GEYJ681	M 680 OHM,J,1/10W	
R691	ERJ6ENF5600	M 560 OHM, 1/10W	
R692-94	ERJ6ENF1001	M 1KOHM, 1/10W	
R695,96	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R802,03	ERG3SJ153H	M 15KOHM, J, 3W	
R805	ERDS1TJ333	C 33KOHM, J,1/2W	
R806	ERQ2CJP6R8S	F 6.8 OHM, J, 2W	
R807	ERQ2CJP390S	F 39 OHM, J, 2W	
R808	ERX12SJR56	M 0.56 OHM, 1/2W	
R809	ERX12SJR68	M 0.68 OHM, J 1/2W	
R810	ERDS2TJ681	C 680 OHM, J,1/4W	
R811	ERDS2TJ100	C 10 OHM, J,1/4W	
R812	ERDS2TJ272	C 2.7KOHM, J,1/4W	
R813	ERDS2TJ152	C 1.5KOHM, J,1/4W	
R814	ERDS2TJ333	C 33KOHM, J,1/4W	
R815	ERDS1FJ474	C 470KOHM, J,1/2W	
R816	ERDS1FJ334	C 330KOHM, J,1/2W	
R817	ERDS2TJ103	C 10KOHM, J,1/4W	
R819	ERG1FJS820D	M 82 OHM, J, 1W	
R820	ERDS2TJ103	C 10KOHM, J,1/4W	
R821	ERDS2TJ332	C 3.3KOHM, J,1/4W	
R824	ERDS2TJ102	C 1KOHM, J,1/4W	
R826	ERDS2TJ102	C 1KOHM, J,1/4W	
R828	ERDS1FJ272	C 2.7KOHM, J,1/2W	
R829,30	ERDS1FJ2R2	C 2.2 OHM, J,1/2W	
R831	ERDS2TJ823	C 82KOHM, J,1/4W	
R832	ERDS2TJ273	C 27KOHM, J,1/4W	
R833	ERD75TAJ825	C 8.2MOHM, J,3/4W	 S1415DAD,S1415DA
R833	ERC12UGK825	S 8.2 MOHM, K,1/2W	 S1315DAD,S1315DA
R834	ERDS2TJ102	C 1KOHM, J,1/4W	
R835,36	ERDS2TJ223	C 22KOHM, J,1/4W	
R837	ERJ6ENF1400	M 140 OHM, 1/10W	
R838	ERJ6ENF5600	M 560 OHM, 1/10W	
R839	ERJ6GEYJ223	M 22KOHM,J,1/10W	
R840	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R842	ERDS2TJ102	C 1KOHM, J,1/4W	
R851	ERX12SJ1R5	M 1.5 OHM,J,1/ 2W	

















R852	ERF3AKR27	W 0.27 OHM, 3W	 S1415DAD,S1415DA
R852	ERF5AK1R5	W 1.5 OHM, 5W	 S1315DAD,S1315DA
R853	ERJ6ENF1802	M 18KOHM, 1/10W	
R854	ERDS2TJ332	C 3.3KOHM, J,1/4W	
R855	ERDS2TJ182	C 1.8KOHM, J,1/4W	
R856	ERJ6ENF1801	M 1.8KOHM, 1/10W	
R861	ERX12SJ1R5	M 1.5 OHM,J,1/ 2W	
R862	ERG2SJ470H	M 47 OHM, J, 2W	
R870	ERJ6GEY0R00	M 0 OHM,J,1/10W	
R1000,01	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1002	EVUE20F25B14	CONTROL 10KOHMB	
R1003	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1004,05	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1006	EVUE30F25B14	CONTROL 10KOHMB	
R1007	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1008	EVUE30F25B14	CONTROL 10KOHMB	
R1009	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1010	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1011	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1012	EVUE30F25B14	CONTROL 10KOHMB	
R1013,14	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1015	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1016	EVUE20F25B14	CONTROL 10KOHMB	
R1017	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1018	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1019	ERJ6GEYJ331	M 330 OHM,J,1/10W	
R1020,21	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R1022-27	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R1028	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R1029,30	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R1031	ERDS2TJ391	C 390 OHM, J,1/4W	
R3001	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R3002	ERJ8ENF75R0	M 75 OHM, F,1/8W	
R3003	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R3004	ERJ8ENF75R0	M 75 OHM, F,1/8W	
R3005	ERJ6ENF1000	M 100 OHM, 1/10W	
R3006,07	ERJ8ENF75R0	M 75 OHM, F,1/8W	
R3008	ERJ6GEYJ101	M 100 OHM,J,1/10W	






R3009-11	ERJ8ENF75R0	M 75 OHM, F, 1/8W	
R3013-15	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R3016	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R3017	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R3018	ERJ6GEYJ101	M 100 OHM, J, 1/10W	
R3019-22	ERJ6GEYJ153	M 15KOHM, J, 1/10W	
R3023	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R3025	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R3026,27	ERJ6GEYJ101	M 100 OHM, J, 1/10W	
R3028	ERJ6GEYJ183	M 18KOHM, J, 1/10W	
R3029	ERJ6GEYJ273	M 27KOHM, J, 1/10W	
R3030	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R3031	ERJ6ENF1201	M 1.2KOHM, 1/10W	
R3032	ERJ6ENF3601	M 3.6KOHM, 1/10W	
R3033	ERJ6ENF1201	M 1.2KOHM, 1/10W	
R3034	ERJ6ENF3601	M 3.6KOHM, 1/10W	
R3035	ERJ6GEY0R00	M 0 OHM, J, 1/10W	
R3036	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R3037,38	ERJ6GEY0R00	M 0 OHM, J, 1/10W	
R3039	ERJ6GEYJ153	M 15KOHM, J, 1/10W	
R3040	ERJ6GEYJ470	M 47 OHM, J, 1/10W	
R3041	ERJ6GEYJ182	M 1.8KOHM, J, 1/10W	
R3043,44	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R3045	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R3046,47	ERJ6GEYJ153	M 15KOHM, J, 1/10W	
R3048	ERJ6GEYJ470	M 47 OHM, J, 1/10W	
R3049,50	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R3051,52	ERJ6GEYJ470	M 47 OHM, J, 1/10W	
R3053	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R3054,55	ERJ6GEYJ470	M 47 OHM, J, 1/10W	
R3056	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R3057	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R3058	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R3059	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R3060	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R3061	ERJ6GEYJ101	M 100 OHM, J, 1/10W	
R3062,63	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R3064-67	ERJ6GEYJ101	M 100 OHM, J, 1/10W	
R3068-71	ERJ6GEYJ272	M 2.7KOHM, J, 1/10W	



R3072	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R3073-76	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R3077-79	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R3080	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R3081	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R3082	ERJ6ENF1800	M 180 OHM, 1/10W	
R3083	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3084	ERJ6ENF8200	M 820 OHM, 1/10W	
R3085	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3086	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R3089	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R3090	ERJ6ENF8200	M 820 OHM, 1/10W	
R3091	ERJ6GEYJ102	M 1KOHM,J,1/10W	
R3092	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R3093,94	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R3095	ERJ6GEYJ183	M 18KOHM,J,1/10W	
R3096	ERJ6GEYJ273	M 27KOHM,J,1/10W	
R3097	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	
R3098	ERJ6GEY0R00	M 0 OHM,J,1/10W	
R3101-03	ERJ6GEYJ750	M 75 OHM,J,1/10W	S1415DAD,S1315DAD
R3106-08	ERJ6GEYJ101	M 100 OHM,J,1/10W	S1415DAD,S1315DAD
R3110-12	ERJ6GEYJ333	M 33KOHM,J,1/10W	S1415DAD,S1315DAD
R3114-16	ERJ6GEYJ153	M 15KOHM,J,1/10W	S1415DAD,S1315DAD
R3119-21	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	S1415DAD,S1315DAD
R3123-25	ERJ6GEY0R00	M 0 OHM,J,1/10W	S1415DAD,S1315DAD
R3126	ERJ6GEYJ103	M 10KOHM,J,1/10W	S1415DAD,S1315DAD
R3127	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	S1415DAD,S1315DAD
R3128	ERJ6GEYJ333	M 33KOHM,J,1/10W	S1415DAD,S1315DAD
R3131	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R3133	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	
R3137,38	ERJ6GEYJ3R3	M3.3OHM,J, 1/10W	
R3140-42	ERJ6GEY0R00	M 0 OHM,J,1/10W	S1415DA,S1315DA
R3143	ERJ6GEYJ333	M 33KOHM,J,1/10W	S1415DAD,S1315DAD
R3144	ERJ6GEYJ103	M 10KOHM,J,1/10W	S1415DAD,S1315DAD
R3145,46	ERJ6GEYJ473	M 47KOHM,J,1/10W	
R3147	ERJ6GEYJ473	M 47KOHM,J,1/10W	S1415DAD,S1315DAD
R3225-29	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R3230	ERJ6GEYJ274	M 270KOHM,J,1/10W	
R3235	ERJ6GEYJ470	M 47 OHM,J,1/10W	


R3236	ERJ6GEYJ123	M 12KOHM,J,1/10W	
R3237	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R3238	ERJ6GEYJ103	M 10KOHM,J,1/10W	
R6501	ERJ6GEYJ391	M 390 OHM,J,1/10W	
R6502	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R6503	ERJ6GEYJ101	M 100 OHM,J,1/10W	
R6504	ERJ6ENF1501	M 1.5KOHM, 1/10W	
R6505	ERJ6ENF1801	M 1.8KOHM, 1/10W	
R6506	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	
R6507	ERJ6GEYJ561	M 560 OHM,J,1/10W	
R6508	ERJ6GEYJ271	M 270 OHM,J,1/10W	
R6509	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	
R6510	ERJ6GEY0R00	M 0 OHM,J,1/10W	
R6511	ERJ6GEYJ392	M 3.9KOHM,J,1/10W	
		CAPACITORS	
C001	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C002-06	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C007,08	ECJ2XC1H150J	C 15PF, J, 50V	
C010	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C011	ECA1HMH470	E 47UF, 50V	
C012,13	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C014	ECA1CMH101	E 100UF, 16V	
C015	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C016	ECA1HMH330	E 33UF, 50V	
C017	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C018	ECA1HMH330	E 33UF, 50V	
C019	ECJ2XF1C105Z	C 1UF, Z, 16V	
C020	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C024	ECJ2XF1C105Z	C 1UF, Z, 16V	
C080	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C081	ECQB1H153JF	P 0.015UF, J, 50V	
C082	ECJ2XC1H820J	C 82PF, J, 50V	
C083	ECJ2XB1H471K	C 470PF, K, 50V	
C084,85	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C086	ECA1HMH470	E 47UF, 50V	
C088	ECJ2XF1C105Z	C 1UF, Z, 16V	
C090	ECJ2XF1H104Z	C 0.1UF, Z, 50V	


C091	ECA1HMH100	E 10UF, 50V	
C203	ECQB1H104KF	P 0.1UF, K, 50V	
C204	ECA1EHG471	E 470UF, 25V	
C206	ECQV1H104JV	P 0.1UF, Z, 50V	
C208	ECA1EHG471	E 470UF, 25V	
C210	ECA1HHG2R2	E 2,2UF, 50V	
C212	ECA1HHG100	E 10UF, 50V	
C214	ECA1HHG4R7	E 4.7UF, 50V	
C217	ECA1CHG471	E 470UF, 16V	
C218	ECQB1H123JF	P 0.012UF, J, 50V	
C301	ECA1EMH331	E 330UF, 50V	
C351,52	ECJ2XC1H150J	C 15PF, J, 50V	
C353	ECJ2XC1H330J	C 33PF, J, 50V	
C359,60	ECQE2104JF	P 0.1UF, J,250V	
C368	ECJ2VF1E224Z	C 0.22UF, Z, 25V	
C370	ECKD3D102KBN	C 1000PF, K, 2KV	
C400	ECA1HMH010	E 1UF, 50V	
C401	ECJ2XC1H470J	C 47PF, J, 50V	
C402	ECQB1H103JF	P 0.01UF, 50V	
C403	ECQB1H222JF	P 2200PF, J, 50V	
C411	ECA1HMH2R2	E 2.2UF, 50V	
C412	ECA1VHG470	E 47UF, 35V	
C413	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C414	ECQB1H822JF	P 8200PF, J, 50V	
C415	ECA1VHG221	E 220UF, 35V	
C416	ECQB1H104KF	P 0.1UF, K, 50V	
C418	ECSF1VE334V	T 0.33UF, 35V	
C419	ECA1HM2R2	E 2.2UF, 50V	
C420	ECQB1H102JF	P 1000PF, J, 50V	
C421	ECQB1H223JF	P 0.022UF, J, 50V	
C422	ECA1CMH101	E 100UF, 16V	
C423,24	ECQB1H473JF	P 0.047UF, J, 50V	
C425	ECJ2XC1H390J	C 39PF, J, 50V	
C428	ECA1HMH2R2	E 2.2UF, 50V	
C429	ECA1EM222	E 2200UF, 25V	
C430	ECQV1H154JZ	P 1UF, J 50V	
C432	ECQB1473KF	P 0.047UF, K,100V	
C435	ECA1VMH101	E 100UF, 35V	
C436	ECA1VM471	E 470UF, 35V	


C501	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C502	ECA1CM471	E 470UF, 16V	
C503	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C504	ECQB1H103JF	P 0.01UF, 50V	
C505	ECJ2XC1H120J	C 12PF, J, 50V	
C510	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C516	ECA1HMH3R3	E 3.3UF, 50V	
C517	ECQB1H562JF	P 5600PF, J, 50V	
C521	ECQB1H104JF	P 0.1UF, J, 50V	
C522	ECJ2XB1H122K	C 1200PF,J, 50V	
C531	ECJ2XB1H272K	C 2700PF,J, 50V	
C532	ECKD3D821JBP	C 820PF, J, 2KV	
C533	ECQM4103JZ	P 0.01UF, J,400V	
C534	ECQB1H822JF	P 8200PF, J, 50V	
C535	ECQB1H393JF	P 0.039UF, J, 50V	
C537	ECWH20392JV	P 3900PF,J, 2KV	
C538	ECWH20182JV	P 1800PF,J, 2KV	
C539	ECKD3D681JBP	P 680PF, J, 2KV	
C542	ECKD3D681JBP	P 680PF, J, 2KV	
C543	ECQB1H273JF	P 0.027UF, J, 50V	
C544	ECWF4684JZ	P 0.68UF, J,400V	
C546	ECQE1335KF	P 3.3UF, K,100V	
C547	ECKD2H222KB2	C 2200PF, K,500V	
C548	ECKF1H101KB	C 100PF, K, 50V	
C550	ECA1HMH470	E 47UF, 50V	
C551	ECA1HMH220	E 22UF, 50V	
C552	ECQE2474JF	P 0.47UF, K, 250V	
C553	ECA1CMH101	E 100UF, 16V	
C554	ECJ2XB1H103K	C 0.01UF, K, 50V	
C555	ECA1VMH470	E 47UF, 35V	
C556	ECA1VHG101	E 100UF, 35V	
C558	ECQB1H104KF	P 0.1UF, K, 50V	
C559	ECKD3A561KBP	C 560PF, K, 1KV	
C562	ECA1HMH4R7	E 4.7UF, 50V	
C563	ECA2EM100	E 10UF, 250V	
C564	ECA1HMH4R7	E 4.7UF, 50V	
C565	ECKD2H561KB2	C 560PF, K,500V	

C567	ECA160V33UB	E 33UF, 160V	
C568	ECEA1CN100U	E 10UF, 16V	
C570	ECEA2CN2R2S	E 2.2UF, 160V	
C600	ECA1CMH101	E 100UF, 16V	
C601	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C602	ECA1HMH4R7	E 4.7UF, 50V	
C604	ECA1CM471	E 470UF, 16V	
C605	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C606-08	ECQB1H104JF	P 0.1UF, J, 50V	
C609	ECA1HMH010	E 1UF, 50V	
C611	ECA1CMH102	E 1000UF, 16V	
C612	ECA1HMH4R7	E 0.47UF, 50V	
C613	ECA1HENR47	E 0.47UF, 50V	
C614	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C616	ECA1CMH101	E 100UF, 16V	
C617	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C618	ECA1CMH101	E 100UF, 16V	
C619,20	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C621	ECJ2XC1H120J	C 12PF, J, 50V	
C622	ECA1HMH4R7	E 4.7UF, 50V	
C623	ECQV1H474JV	P 0.47UF, J, 50V	
C624-26	ECQB1H104JF	P 0.1UF, J, 50V	
C631	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C632	ECA1HMH330	E 33UF, 50V	
C633	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C634	ECA1HMH330	E 33UF, 50V	
C635-37	ECJ2XC1H101J	C 100PF, J, 50V	
C640	ECA1HEN010	E 1UF, 50V	
C642	ECQV1H334JM	P 0.33UF, J, 50V	
C644	ECCF1H101JC	C 100PF, J, 50V	
C645	ECCF1H181JC	C 180PF, J, 50V	
C646	ECA1HMH4R7	E 4.7UF, 50V	
C647	ECCF1H680JC	C 68PF, J, 50V	
C801,02	ECKDAE472ZE	C 4700PF, Z,	
C803,04	ECKCNA152MEB	C 1500PF, M	
C805	ECKDAE472ZE	C 4700PF, Z,	
C807	ECQU2A823MN	P 0.082UF, M,250V	
C809,10	ECQB1H103JF	P 0.01UF, 50V	

C811	EC0S2GA181CB	M 180 OHM, 1/4W	S1415DAD,S1415DA
C811	ECOS2DA391CB	E 390UF, 200V	 S1315DAD,S1315DA
C812	ECOS2DA391CB	E 390UF, 200V	S1315DAD,S1315DA
C813	ECQB1H333KF	P 0.033UF, K, 50V	
C814	ECKD3D471JBN	C 470PF, J, 2KV	
C815	ECQB1H471JF	P 470PF, J, 50V	
C816	ECQB1H272JF	P 2700PF, J, 50V	
C817	ECA1HHG101	E 100UF, 50V	
C818	ECA1HHG220	E 22UF, 50V	
C819,20	ECKD3A471KBP	C 470PF, K, 1KV	
C821	ECKD3A561KBP	C 560PF, K, 1KV	
C822	EC0S2PA221BB	E 220UF, 180V	
C823	ECA1EHG102	E 1000UF, 25V	
C824	ECKD3A561KBP	C 560PF, K, 1KV	
C825,26	EEUFC1E102	E 1000UF, 25V	
C827	ECA1EHG102	E 1000UF, 25V	
C828	ECA1CM101	E 100UF, 16V	
C829	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C830	ECA1VHG221	E 220UF, 35V	
C831	ECA1AHG222	E 2200UF, 10V	
C832	ECJ2XF1H103Z	C 0.01UF, Z, 50V	
C833	ECA1HHG470	E 47UF, 50V	
C835	ECA1VHG221	E 220UF, 35V	
C836	ECKCNA102MBB	C 1000PF, M,	
C837	ECA1HHG010	E 1UF, 50V	
C838	EEUFC1V221	E 220UF, 35V	
C839	ECJ2XB1H103K	C 0.01UF, K, 50V	
C840	ECA1HMH4R7	E 4.7UF, 50V	
C850	ECA1CMH101	E 100UF, 16V	
C851	ECA1VHG221	E 220UF, 35V	
C1000,01	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C3001,02	ECEA1EKN100	E 10UF, 25V	
C3003	ECQB1H103JF	P 0.01UF, 50V	
C3004	ECEA1HKN010	E 1UF, 50V	
C3005-07	ECEA1EKN100	E 10UF, 25V	
C3009	ECEA1EKN220	E 22UF, 25V	
C3013	ECEA1EKN4R7	E 4.7UF, 25V	
C3014	ECEA1CKA101	E 100UF, 16V	

C3015	ECEA1HKA330	E 33UF, 50V	S1415DA,S1315DA
C3016,17	ECEA1HKA100	E 10UF, 50V	
C3018	ECJ2XC1H181J	C 180PF, J, 50V	
C3019	ECEA1HKN010	E 1UF, 50V	
C3102-04	ECEA1EKN100	E 10UF, 25V	S1415DAD,S1315DAD
C3105	ECEA1HKA100	E 10UF, 50V	S1415DAD,S1315DAD
C3231	ECQB1H104JF	P 0.1UF, J, 50V	
C3233	ECA1HMH100	E 10UF, 50V	
C3234	ECJ2XF1H104Z	C 0.1UF, Z, 50V	
C3235	ECA1EM471	E 470UF, 25V	
C6501	ECA1CMH101	E 100UF, 16V	
C6502	ECJ2XC1H470J	C 47PF, J, 50V	
C6511	ECQB1H103JF	P 0.01UF, 50V	
C6512	ECA1VMH470	E 47UF, 35V	
		OTHERS	
A1	TJSF10025	25P CONNECTOR	
A4	TJS3A9650	4P CONNECTOR	
A5,A6	TJS118590	2P CONNECTOR	
A8	TJS5A9520	7P CONNECTOR	
A9	TJS6A8560	4P CONNECTOR	
B1	TJSF10125	25P CONNECTOR	
B2,B3	TJS1A9850	12P CONNECTOR	
B4	TJS118590	2P CONNECTOR	
B5	TJS3A9660	5P CONNECTOR	
B7	TJS3A9640	3P CONNECTOR	
B8	TJS5A9530	7P CONNECTOR	
B9	TJS3A9670	6P CONNECTOR	
DS1	TJS118590	2P CONNECTOR	S1415DAD,S1315DAD
T1	TJS5A8170	CONNECTOR	
W2,W3	TJS2A8410	CONNECTOR	
W5	TJS1A8080	2P CONNECTOR	
Y1	TJS3A9660	5P CONNECTOR	
Y2	TJS3A9650	4P CONNECTOR	
F801	XBA2C31TB5L	FUSE	
F801-1,-2	TJC6320	FUSE HOLDER,SMALL	
JA1-A3	ERJ6GEY0R00	M 0 OHM,J,1/10W	
JA4	ERJ6GEY0R00	M 0 OHM,J,1/10W	S1415DA,S1315DA

JA5-19	ERJ6GEY0R00	M 0 OHM,J,1/10W	
JA22	ERJ6GEY0R00	M 0 OHM,J,1/10W	
JA24,25	ERJ6GEY0R00	M 0 OHM,J,1/10W	
JA26	ERJ6GEY0R00	M 0 OHM,J,1/10W	S1415DAD,S1315DAD
JA27	ERJ6GEY0R00	M 0 OHM,J,1/10W	
JK351	TJS1A5081B	CRT SOCKET	
JK3001	TJS1A4480	BNC TERMINAL	
JK3002	TJSD01202	BNC TERMINAL	
JK3003	TJSF03904	S TERMINAL	
JK3004	TJS2A9010	S-VIDEO TERMINAL	
JK3005	TJSF47902	JACK	
JK3006	TJS1A4480	BNC TERMINAL	
JK3007	TJSD01202	BNC TERMINAL	
JK3008	TJS1A4480	BNC TERMINAL	
JK3009	TJSD01202	BNC TERMINAL	
JK3010	TJS1A4480	BNC TERMINAL	
JK3011	TJSD01202	BNC TERMINAL	
JK3012	TJS1A7200	HEDPHONE JACK	
JK3013	TJS1A4480	BNC TERMINAL	
JK3014	TJSD01202	BNC TERMINAL	
JK3015	TJSF47902	JACK	
JK3016	TJSF48202	JACK	S1415DA,S1315DA
JK3017-19	TJS8A4291	PHONO PIN	S1415DAD,S1315DAD
JS3101	ERJ6GEY0R00	M 0 OHM,J,1/10W	S1415DA,S1315DA
	J0KG00000024	CORE	S1415DAD,S1315DAD
	TSKA168	CORE	S1415DAD,S1315DAD
	TSXF222	CORD (HD2)	S1415DAD,S1315DAD
	TSXF223	CORD(VD2)	S1415DAD,S1315DAD
	TSXF224	CORD(A27-BG1)	S1415DAD,S1315DAD
	TSXF225	CORD(PR IN)	S1415DAD,S1315DAD
	TSXF226	CORD(PB IN)	S1415DAD,S1315DAD
RTL	TNPA1708	CIRCUIT BOARD Y	
RTL	TNPA1709	CIRCUIT BOARD S	
RTL	TNPA1786	CIRCUIT BOARD T	
RTL	TNPA1799	CIRCUIT BOARD N	
RTL	TNPH0345	CIRCUIT BOARD A	S1415DAD,S1415DA
RTL	TNPH0345AA	CIRCUIT BOARD A	S1315DAD,S1315DA
RTL	TXN/B1NERZ	CIRCUIT BOARD B	

RTL	TXN/W1NGGZ	CIRCUIT BOARD W	S1415DAD,S1315DAD
RTL	TXN/W1NERZ	CIRCUIT BOARD W	S1415DA,S1315DA
RTL	TXN/SDINGGZ	CIRCUIT BOARD DS	S1415DAD,S1315DAD
S801	ESB92D23B	SWITCH	
S1001	TSEA0003	SWITCH	
S1002-07	EVQPF106K	SWITCH	
X001	TSSA104	CRYSTAL	
X601	TSSA116	CRYSTAL	
X6501	TAFHCF0234	COM FILTER	

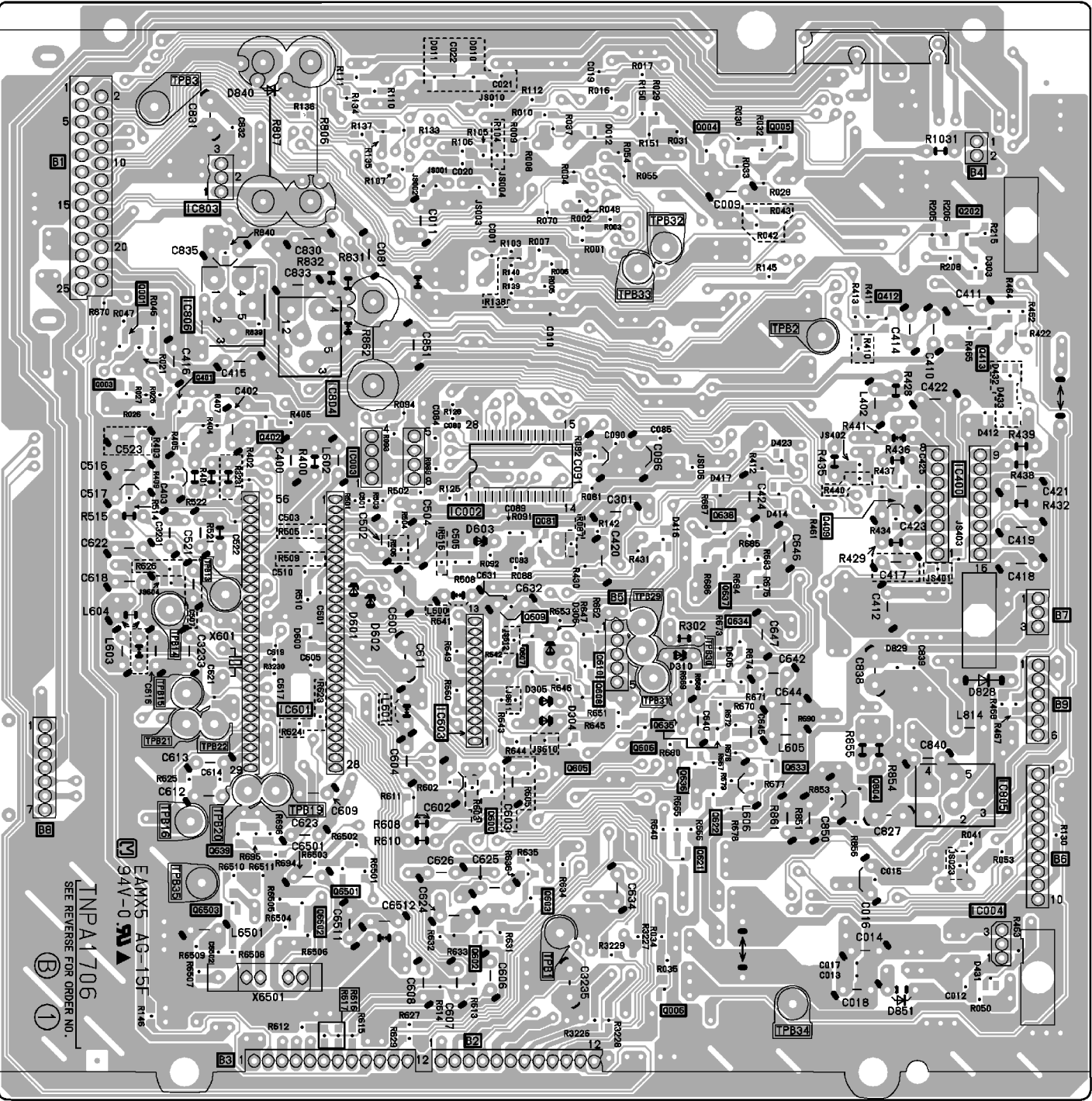
•@

[TOP PREVIOUS](#)

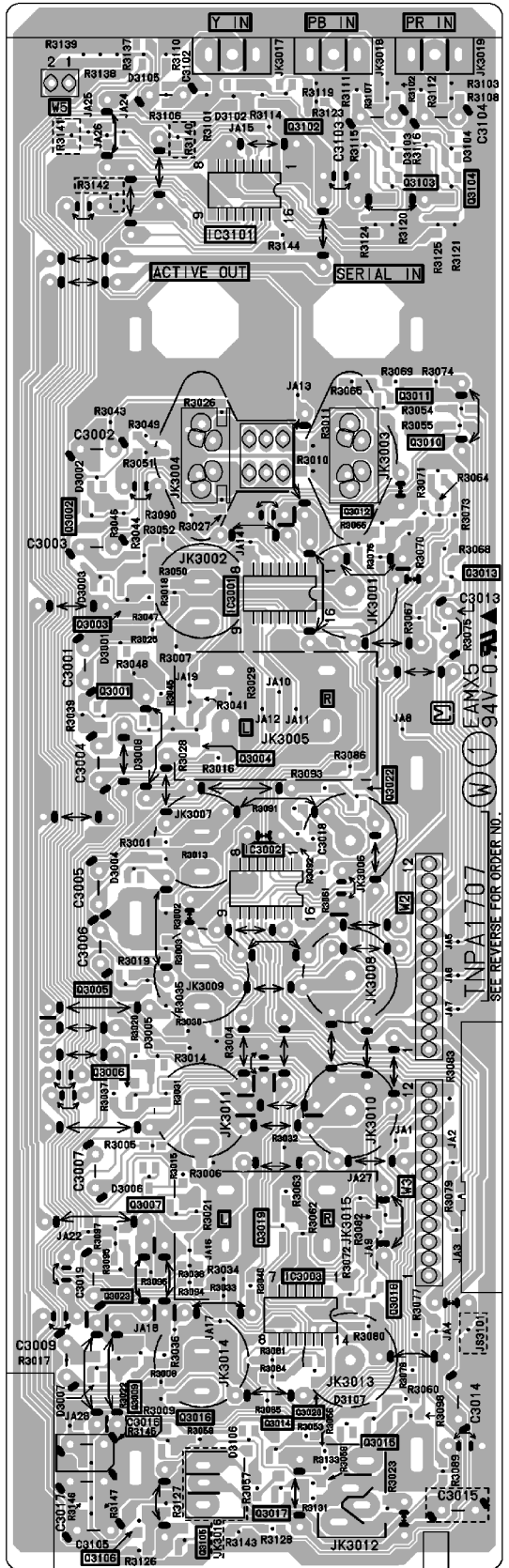
B-P.C.Board TXN/B1NERZ (Foil Side)

IC		IC806		D-2		Q402		D-2		Q608		B-3		Q638		C-4		TPB13		C-2		TPB31		C-4	
		TRANSISTOR																							
IC002	C-3	Q001	D-1	Q409	C-4	Q609	C-3	Q639	B-2	TPB14	C-1	TPB32	D-4	Q804	B-5	TPB15	B-2	TPB33	D-4	Q805	B-2	TPB16	B-2	TPB34	A-4
IC003	C-2	Q002	D-1	Q412	D-5	Q610	C-3	Q804	B-5	TPB15	B-2	TPB33	D-4	Q6501	B-2	TPB19	B-2	TPB34	A-4	Q6502	A-2	TPB20	B-2	TPB35	B-2
IC004	A-5	Q003	D-1	Q413	D-5	Q621	B-4	Q6503	A-2	TPB21	B-2	TPB35	B-2	Q6503	A-2	TPB21	B-2	TPB35	B-2	Q6503	A-2	TPB21	B-2	TPB35	B-2
IC400	C-5	Q004	E-4	Q600	B-3	Q622	B-4	TPB1	A-3	TPB22	B-2	TPB30	C-4	Q602	A-3	TPB22	B-2	TPB30	C-4	Q602	A-3	TPB22	B-2	TPB30	C-4
IC601	C-2	Q005	E-4	Q602	A-3	Q633	B-4	TPB2	D-4	TPB29	C-4	TPB30	C-4	Q603	B-3	TPB29	C-4	TPB30	C-4	Q603	B-3	TPB29	C-4	TPB30	C-4
IC603	B-3	Q006	A-4	Q603	B-3	Q634	C-4	TPB3	E-1	TPB30	C-4	TPB30	C-4	Q605	B-3	TPB30	C-4	TPB30	C-4	Q605	B-3	TPB30	C-4	TPB30	C-4
IC803	E-2	Q081	C-3	Q605	B-3	Q635	B-4	TPB30	C-4	TPB30	C-4	TPB30	C-4	Q606	B-4	TPB30	C-4	TPB30	C-4	Q606	B-4	TPB30	C-4	TPB30	C-4
IC804	D-2	Q202	E-5	Q606	B-4	Q636	B-4	TPB30	C-4	TPB30	C-4	TPB30	C-4	Q607	C-3	TPB30	C-4	TPB30	C-4	Q607	C-3	TPB30	C-4	TPB30	C-4
IC805	B-5	Q401	D-1	Q607	C-3	Q637	C-4	TPB30	C-4	TPB30	C-4	TPB30	C-4	Q607	C-3	TPB30	C-4	TPB30	C-4	Q607	C-3	TPB30	C-4	TPB30	C-4

ADDRESS INFORMATION



W-P.C.Board TXN/W1NGGZ (BT-S1415DAD/S1315DAD) (Foil Side) TXN/W1NERZ (BT-S1415DA/S1315DA)



W-P.C.Board (Foil Side)	
IC	
IC3001	D-7
IC3002	C-7
IC3003	B-8
TRANSISTOR	
Q3001	D-7
Q3002	E-7
Q3003	D-7
Q3004	D-7
Q3005	C-7
Q3006	B-7
Q3007	B-7
Q3009	A-7
Q3010	E-8
Q3011	E-8
Q3012	E-8
Q3013	D-8
Q3014	A-7
Q3015	A-8
Q3016	A-7
Q3017	A-7
Q3018	B-8
Q3019	B-7
Q3020	A-8
Q3022	D-8
Q3023	B-8
* Q3102	F-8
* Q3103	F-8
* Q3104	F-8
* Q3105	A-7
* Q3106	A-7

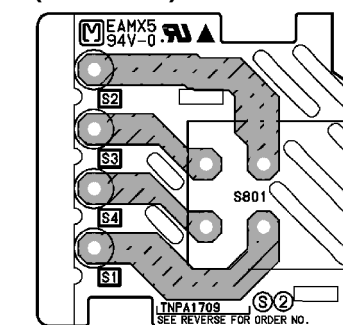
ADDRESS INFORMATION

* BT-S1415DAD/S1315DAD only

A

ADDRESS INFORMATION

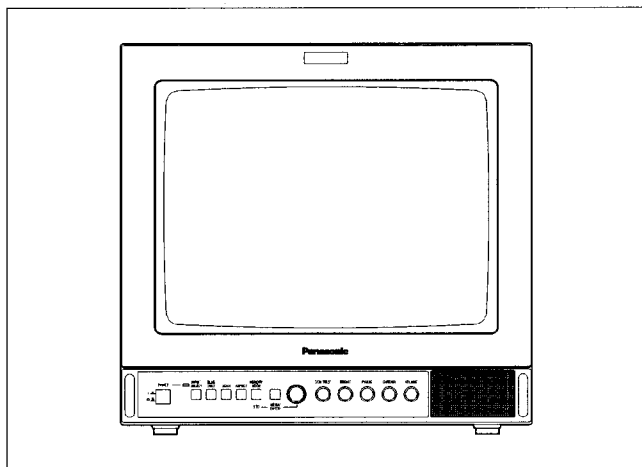
ADDRESS INFORMATION



Operating Instructions

Colour Video Monitor

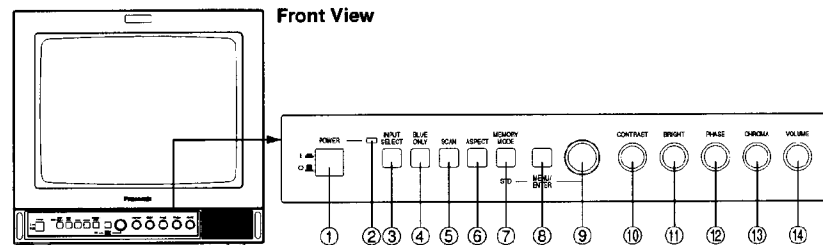
Models No. **BT-S1415DAD** (with built-in SDI)
BT-S1415DA



Panasonic

Read these instructions completely before operating this unit.

Operation of Front Panel Controls



① POWER switch

This switch is used to turn the monitor power on and off.

② Power indicator

This indicator will light when the power is on.

③ INPUT SELECT switch

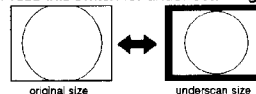
The input changes between LINE A, LINE B and SDI each time this switch is pressed. (SDI is only available for the BT-S1415DAD.)

④ BLUE ONLY switch

This switch can be used to change the screen display to a blue-only screen. Refer to page 15 for details. This function is disabled when LINE B (RGB) signals are being received.

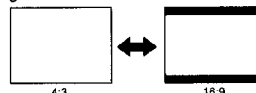
⑤ SCAN switch

Press this switch for under-scanning.



⑥ ASPECT Switch

Press this switch to change the aspect ratio to 16:9. To return to the original aspect, press this switch again.

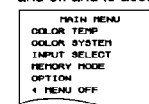


⑦ MEMORY MODE/STD switch

This button can be used to return the CONTRAST, BRIGHT, PHASE and CHROMA adjustment values to the values which have previously been recorded in memory by the user (MEMORY MODE ON). The settings can be returned to their original values by pressing the switch once more (MEMORY MODE OFF). Refer to the right for the method of storing the adjustment values. (If a menu is being displayed, this switch changes the adjustment value displayed to the factory default setting.)

⑧ MENU/ENTER switch

This switch is used to turn the menu screens on and off and to accept a setting.



⑨ Rotary switch

This switch is used to move the cursor among items to be selected in a menu screen, and to adjust the picture.

⑩ CONTRAST control



⑪ BRIGHT control



⑫ PHASE control (for NTSC)



⑬ CHROMA control

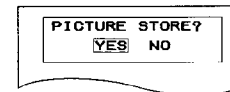


⑭ VOLUME control



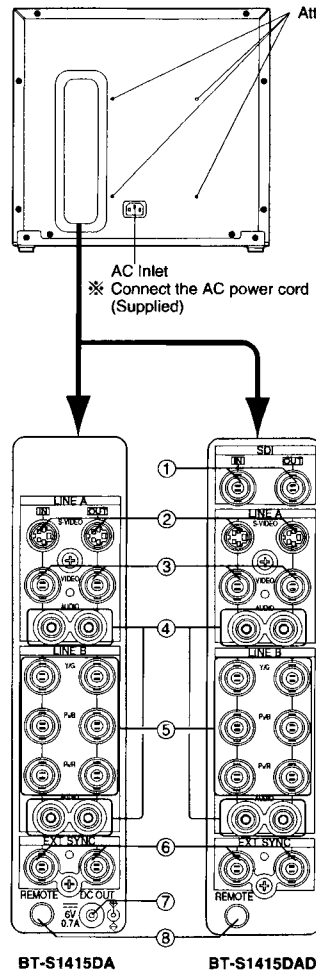
Storing adjustment values

1. If MEMORY MODE is ON, first press the MEMORY MODE/STD switch to turn it OFF.
2. Press and hold the MEMORY MODE/STD switch for 3 seconds.
3. The following "PICTURE STORE?" screen is displayed.
4. Turn the rotary switch to choose "YES".
5. Press the MENU/ENTER switch to store.



Location of Connectors

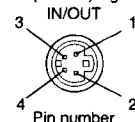
Rear View



Attachment Hole for ET-SD06 (option, BT-S1415DA only)

- ① **SDI IN/OUT connectors (BT-S1415DAD only) (BNC)**
These connectors are used to input and output serial digital component signals. A cable-buffered signal is output from the OUT connector.

- ② **S-VIDEO IN/OUT terminals (MINI DIN 4-pin)**
These terminals are used to input and output S-VIDEO (Y/C separated) signals.



Pin No.	Function
1	Ground (Luminance)
2	Ground (Chroma)
3	Luminance
4	Chroma

- ③ **VIDEO IN/OUT connectors (BNC)**
These connectors are used to input and output composite video signals.

- ④ **AUDIO IN/OUT connectors (RCA Phono)**
These connectors are used to input and output LINE A/LINE B (SDI) audio signals. The IN/OUT connectors have an internal bridge connection, so that the input signals pass through and are output without change. When SDI is selected, the audio signal connected to LINE B is output.

- ⑤ **RGB/YpPr IN/OUT connectors (BNC)**
These terminals are used to input analogue RGB signals (primary colour signals) or analogue component (YpPr) signals (colour difference signals).

- ⑥ **EXT SYNC IN/OUT connectors (BNC)**
These connectors are a loop through input for external sync.

- ⑦ **DC OUT Jack (BT-S1415DA only)**
This jack can supply 6 Volts to power the Optional Digital Interface Unit (ET-SD06).

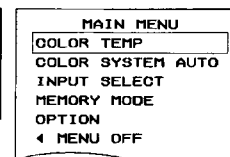
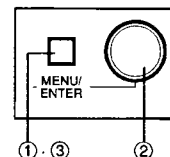
- ⑧ **REMOTE Jack (M3)**
The remote control for selecting the aspect ratio and the tally lamp switch plugs in here. (Refer to page 13.)

Notes on above connectors ②, ③, ⑤ and ⑥

- Each connector is equipped with an automatic termination function. If no component is connected to an output connector, the connector is automatically terminated at 75 Ω. If another component is connected to an output terminal, the connector is automatically changed to high impedance. You should add a 75 Ω termination to the component which is connected.
- The input connectors and output connectors have an internal bridge connection, so that the signals which are input pass through and are output without change.

Control Menu Operation

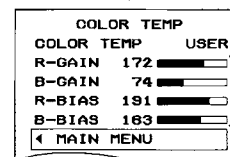
Displaying the COLOR TEMP menu



- Press to display the MAIN MENU screen.
- Turn to select "COLOR TEMP".
- Press to display the COLOR TEMP menu.

NOTE:

- To clear the MAIN MENU screen, turn the rotary switch to select "MENU OFF" and then press the MENU/ENTER switch.

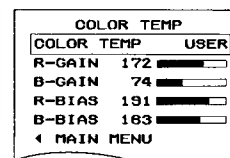
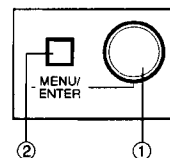


Standard colour temperatures for the picture currently being received
Adjustment value for user mode colour temperature (Cannot be selected when not in user mode)

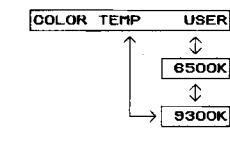
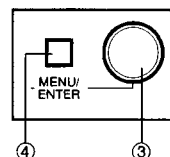
NOTE:

- To return to the MAIN MENU screen, turn the rotary switch to select "MAIN MENU" and then press the MENU/ENTER switch.

Changing the colour temperature



- Turn to select "COLOR TEMP".
- Press to enter colour temperature select mode.



- Turn to select the colour temperature.
- Press to accept the setting.

NOTE:

- The user mode colour temperature is set to "6500K" at the time of shipment from the factory.
- Colour temperature settings are stored separately for LINE A, LINE B and SDI. (SDI is only available for the BT-S1415DAD.)

Adjusting the user mode colour temperature

Example: Adjusting B-BIAS

① Turn to select "B-BIAS".
② Press to enter adjustment mode.

NOTE:
• This cannot be selected except when adjusting the user mode colour temperature.

③ Turn to adjust.
Decrease Increase

④ Press to store the setting.

B-BIAS adjustment mode

NOTE:

- If the MEMORY MODE/STD switch is pressed in step ③ after the adjustment has been made (before the MENU/ENTER switch is pressed), the value will return to what it was before adjustment.



Returning the adjusted user mode colour temperature to the standard setting (factory default setting)

Press the MEMORY MODE/STD switch when the COLOR TEMP menu is displayed.

① Press the MEMORY MODE/STD switch.

② Turn to select "6500K" or "9300K".

③ Press to reset.

The user mode colour temperature setting will then return to the standard setting.

Selecting the colour system format

① Press to display the MAIN MENU screen.
② Turn to select "COLOR SYSTEM".
③ Press to enter selection mode.

NOTE:
• This can only be selected for LINE A input.

④ Turn to select the format.
⑤ Press to accept the selection.
• This should be set to "AUTO" for normal use.

NOTE:

- When "AUTO" is set, the format will be detected automatically if the input signal is in either NTSC, PAL or SECAM format.
- If there is a lot of noise in the input signal or if the signal level is low, the picture may not be stable if "AUTO" is selected. If this happens, select the appropriate format for the signal manually.
- To clear the MAIN MENU screen, turn the rotary switch to select "MENU OFF" and then press the MENU/ENTER switch.

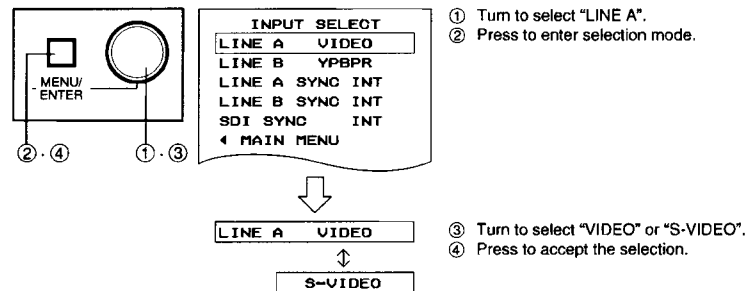
Displaying the INPUT SELECT menu

① Press to display the MAIN MENU screen.
② Turn to select "INPUT SELECT".
③ Press to display the INPUT SELECT menu.

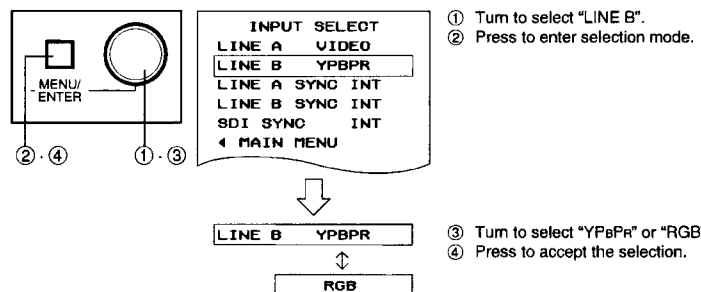
NOTE:
• To clear the MAIN MENU screen, turn the rotary switch to select "MENU OFF" and then press the MENU/ENTER switch.

NOTE:
• To return to the MAIN MENU screen, turn the rotary switch to select "MAIN MENU" and then press the MENU/ENTER switch.

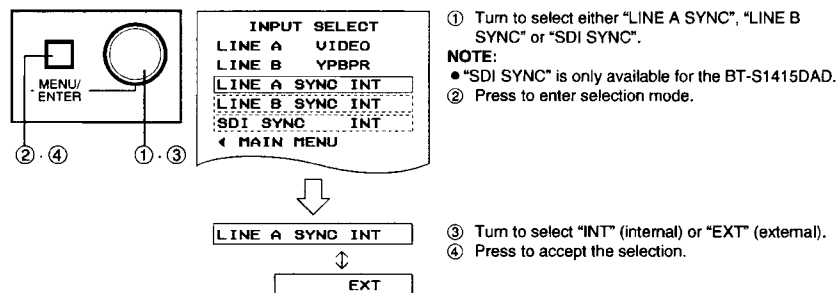
Switching to LINE A (Video and S-Video signals)



Switching to LINE B (RGB and YPBPr signals)

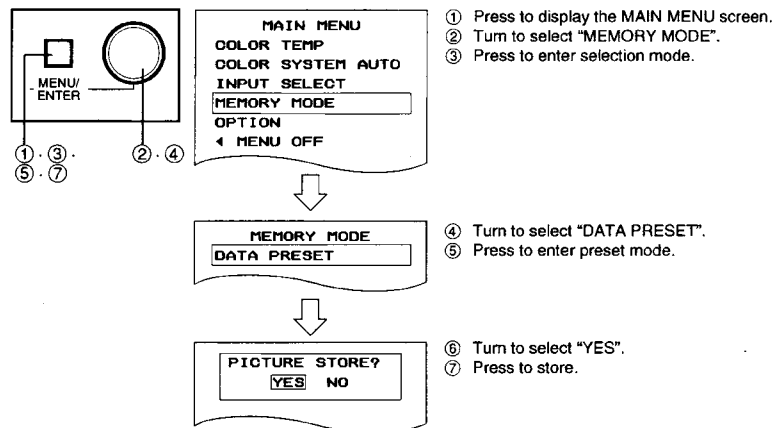


Selecting the synchronization method (external or internal synchronization)

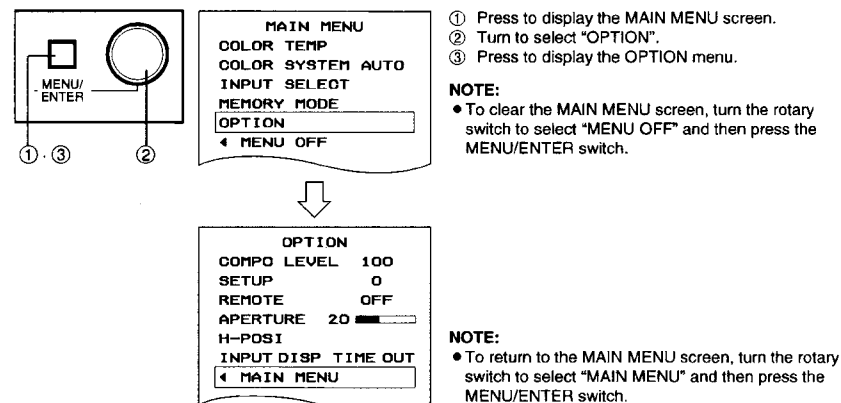


Storing adjustment values

The following procedure can be used to store the current CONTRAST, BRIGHT, PHASE and CHROMA adjustment values in memory. (The MEMORY MODE switch on the front panel can also be used to do this. Refer to page 5 for details.)

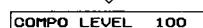
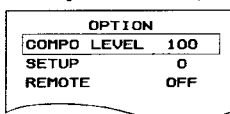
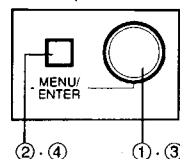


Displaying the OPTION menu



Changing the component level

The component level can be changed when LINE B (YPbPr) is selected.



- ① Turn to select "COMPO LEVEL".
- ② Press to enter selection mode.

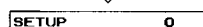
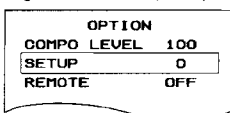
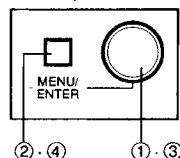
- ③ Turn to select "100" or "75".
- ④ Press to accept the selection.

100: Y, Pb, Pr for use with 100 % colour bar standard system

75: Y, Pb, Pr for use with 75 % colour bar standard system

Changing the setup level

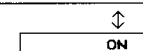
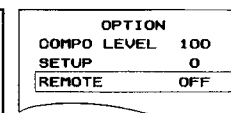
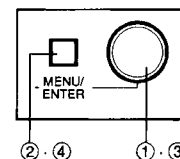
The setup level can be changed when LINE A (NTSC) or LINE B (YPbPr) is selected.



- ① Turn to select "SETUP".
- ② Press to enter selection mode.

- ③ Turn to select "0" or "7.5".
 - ④ Press to accept the selection.
- 0: For video signal without set-up level
7.5: For video signal with set-up level (7.5 %)

Turning remote operation on and off

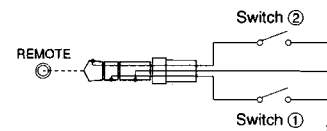


- ① Turn to select "REMOTE".
- ② Press to enter selection mode.

- ③ Turn to select "OFF" or "ON".
- ④ Press to accept the selection.

"OFF" ... The aspect can be changed using the ASPECT switch at the front of the set.

"ON" ... The aspect can be changed using the external switch connected to the REMOTE Jack at the back of the set.

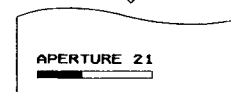
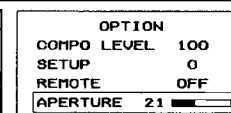
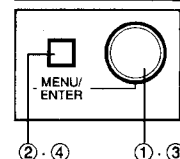


Switch	Function	Details	
		Short	Open
①	Tally lamp	On	Off
②	Aspect ratio	16:9	4:3

NOTE:

- Switch ① (Tally lamp) operation is enabled regardless of the REMOTE setting.
- When set to "ON", the ASPECT switch at the front of the set will not function.

Adjusting the aperture



APERTURE adjustment mode

- ① Turn to select "APERTURE".
- ② Press to enter adjustment mode.

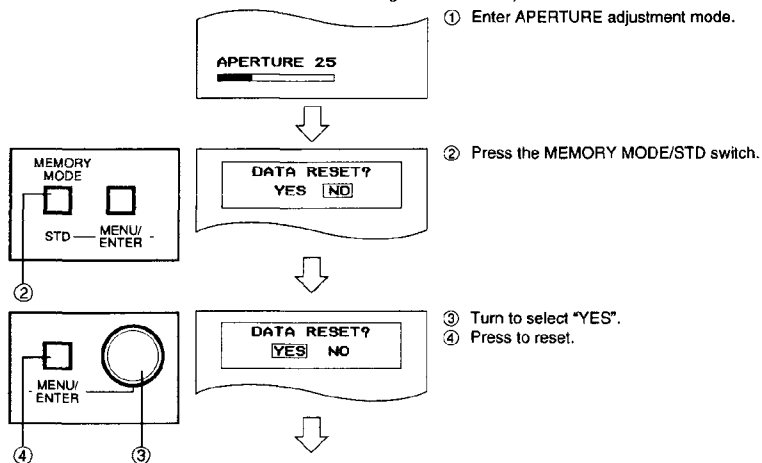
- ③ Turn to adjust.
- ④ Press to store the setting.

NOTE:

- Aperture adjustment values are stored separately for LINE A, LINE B (YPbPr) and SDI. (SDI is only available for the BT-S1415DAD.)

Returning APERTURE adjustment values to standard settings (factory default settings)

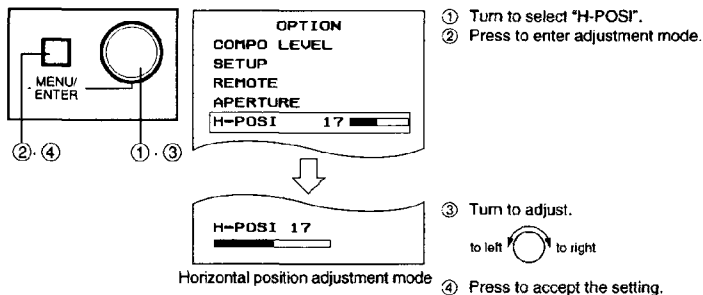
Press the MEMORY MODE/STD switch after entering APERTURE adjustment mode.



The APERTURE setting value will then return to the factory default setting, and the OPTION MENU screen will be displayed.

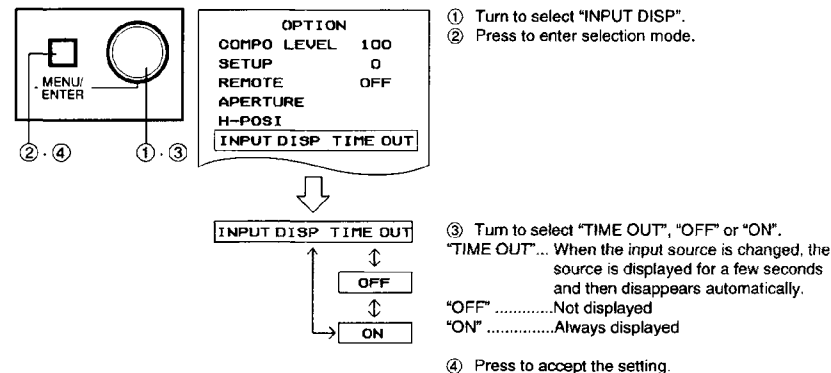
Adjusting the horizontal position

The horizontal picture position can be changed when LINE B (RGB) is selected.

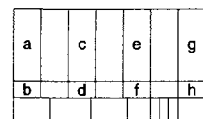


The horizontal position value can be returned to the factory default setting by following the same procedure as for the aperture setting given above.

Selecting the input display



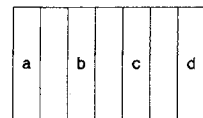
Setting the chrominance and phase when using BLUE ONLY mode



SMPTE colour bar pattern

Procedure for NTSC

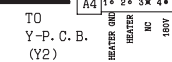
1. Input a SMPTE colour bar signal as shown at left, and then follow the procedure above to set BLUE ONLY mode.
2. Use the phase VR to adjust so that c, d, e and f are at the same level.
3. Use the chroma VR to adjust so that a, b, g and h are at the same level.
4. Repeat steps 2 and 3 until a, b, c, d, e, f, g and h are at the same level.
5. The chroma and phase will be set once you exit BLUE ONLY mode.



Colour bar pattern

Procedure for PAL and SECAM

1. Input a colour bar signal as shown at left, and then follow the procedure above to set BLUE ONLY mode.
2. Use the chroma VR to adjust so that b, c and d are at the same level.
3. The chroma will be set once you exit BLUE ONLY mode.



F

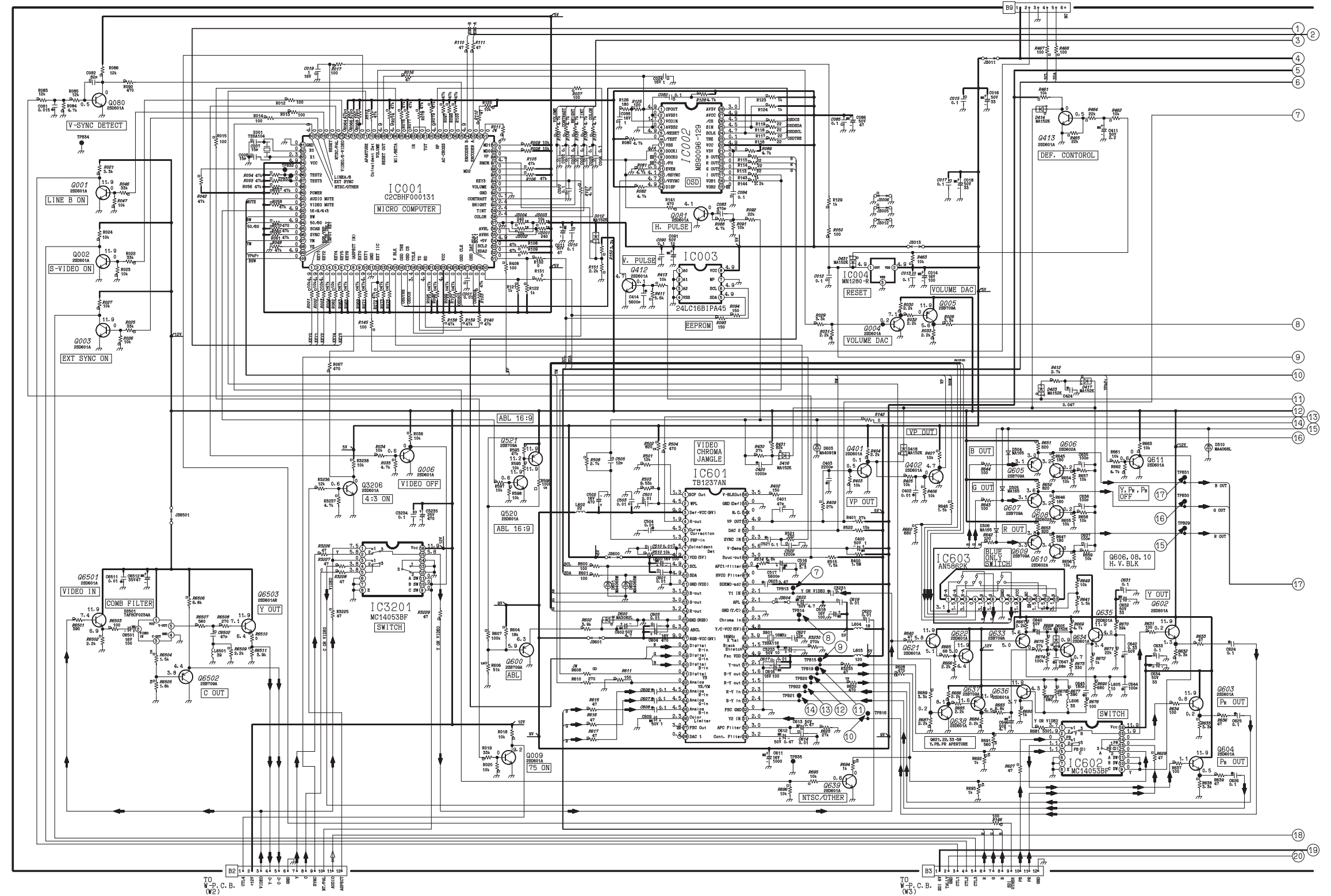
E

D

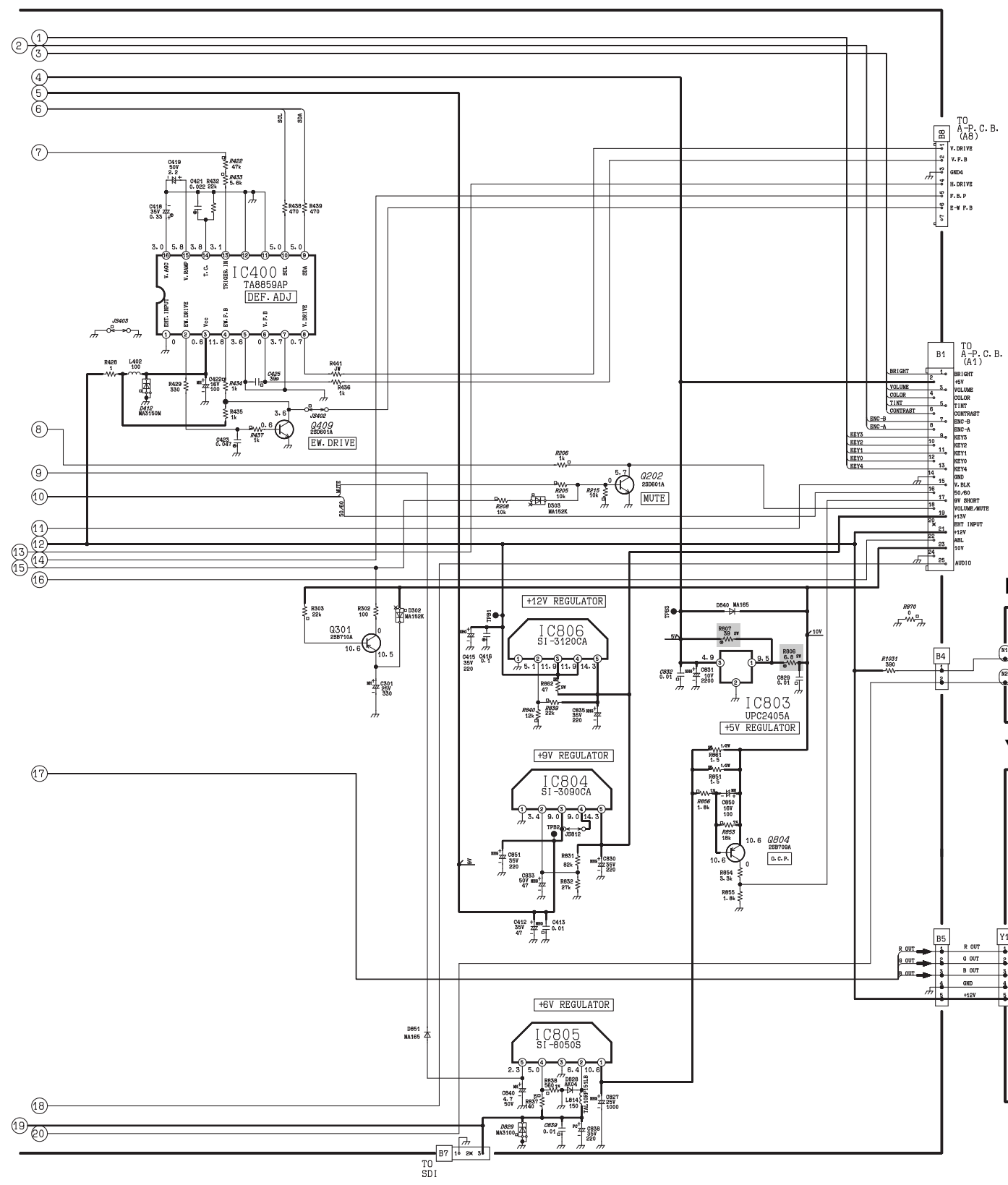
C

B

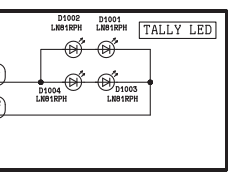
A



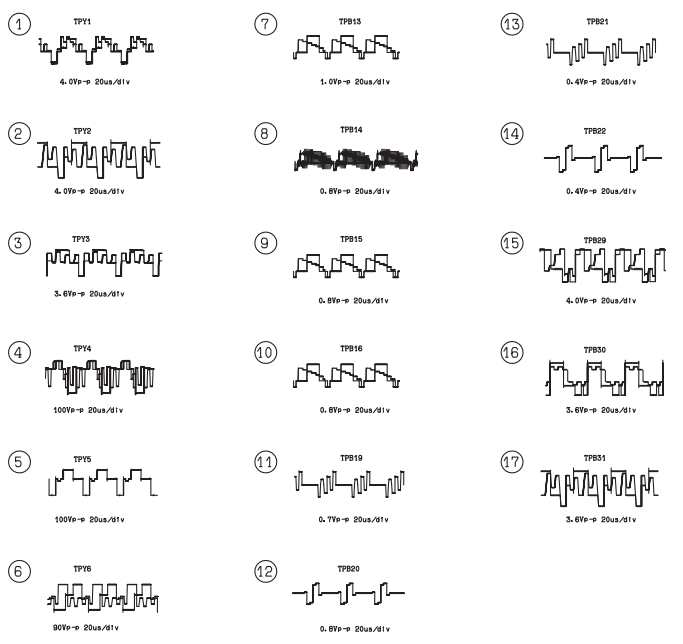
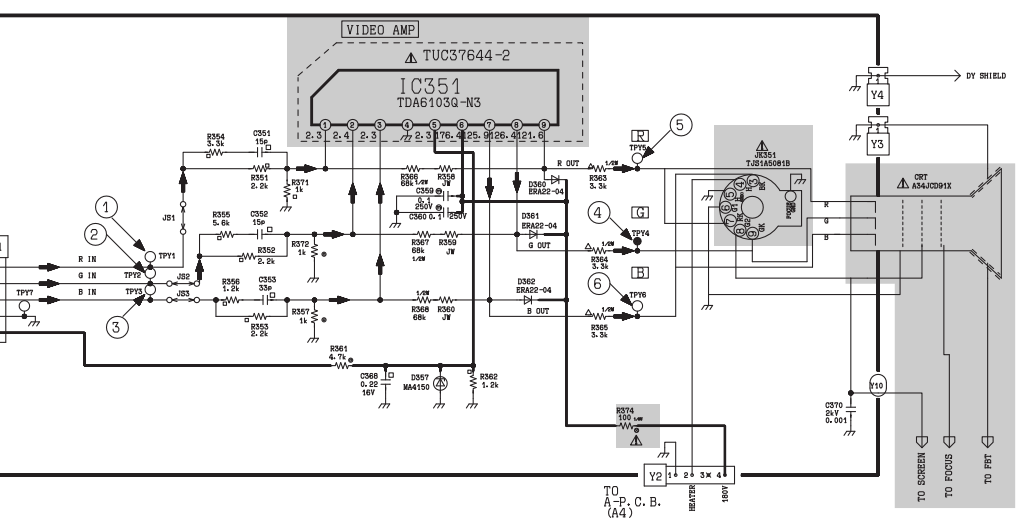
B-P.C.Board TXN/B1NERZ (2/2)



N-P.C.Board TNPA1799



Y-P.C.Board TNPA1708



F

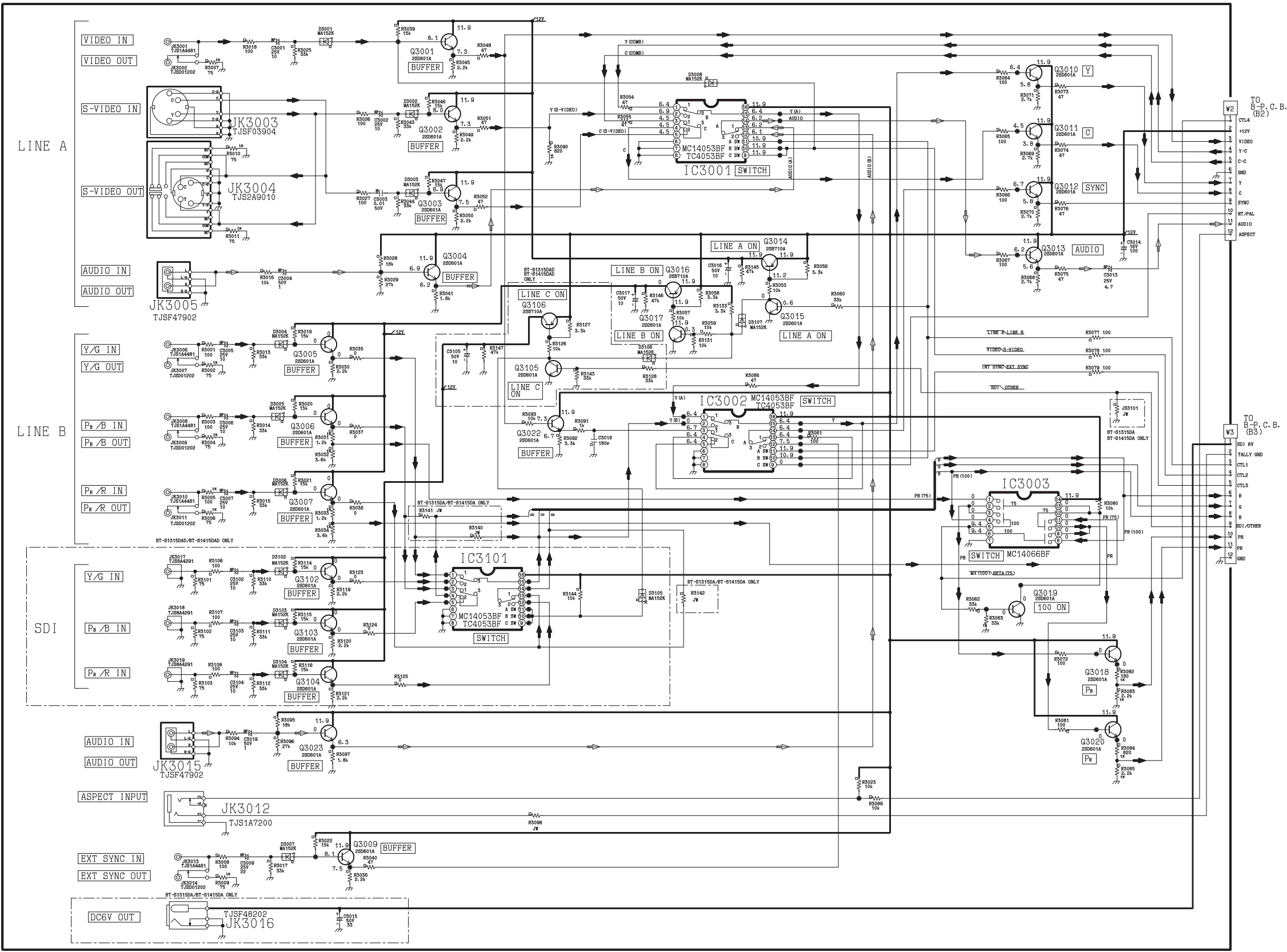
E

D

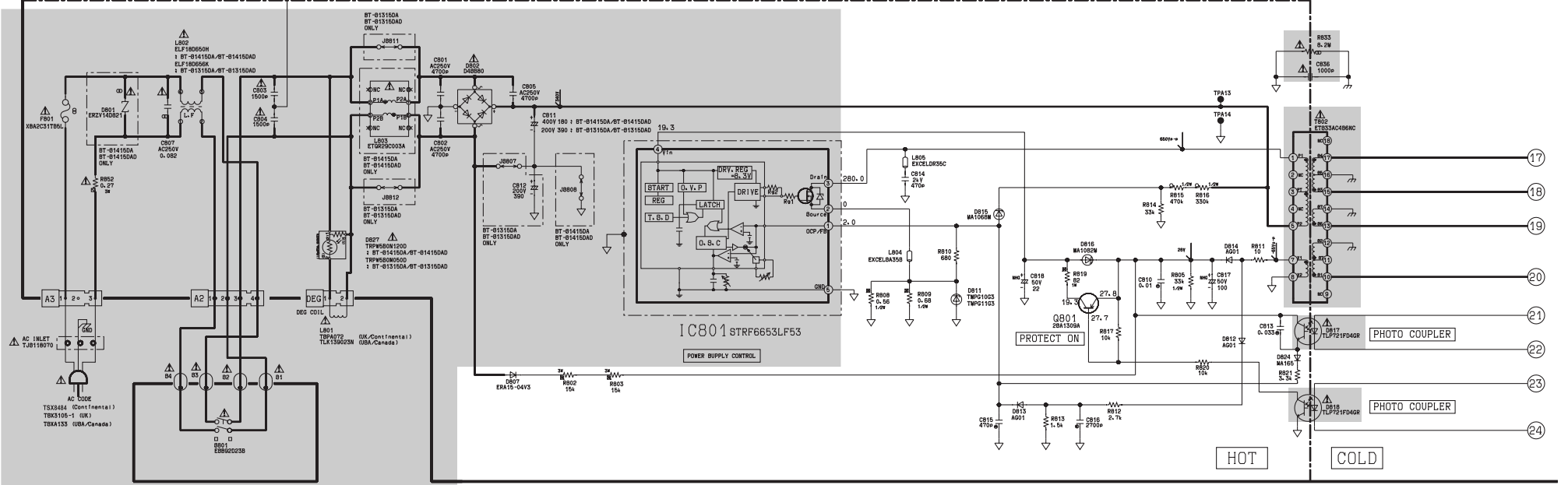
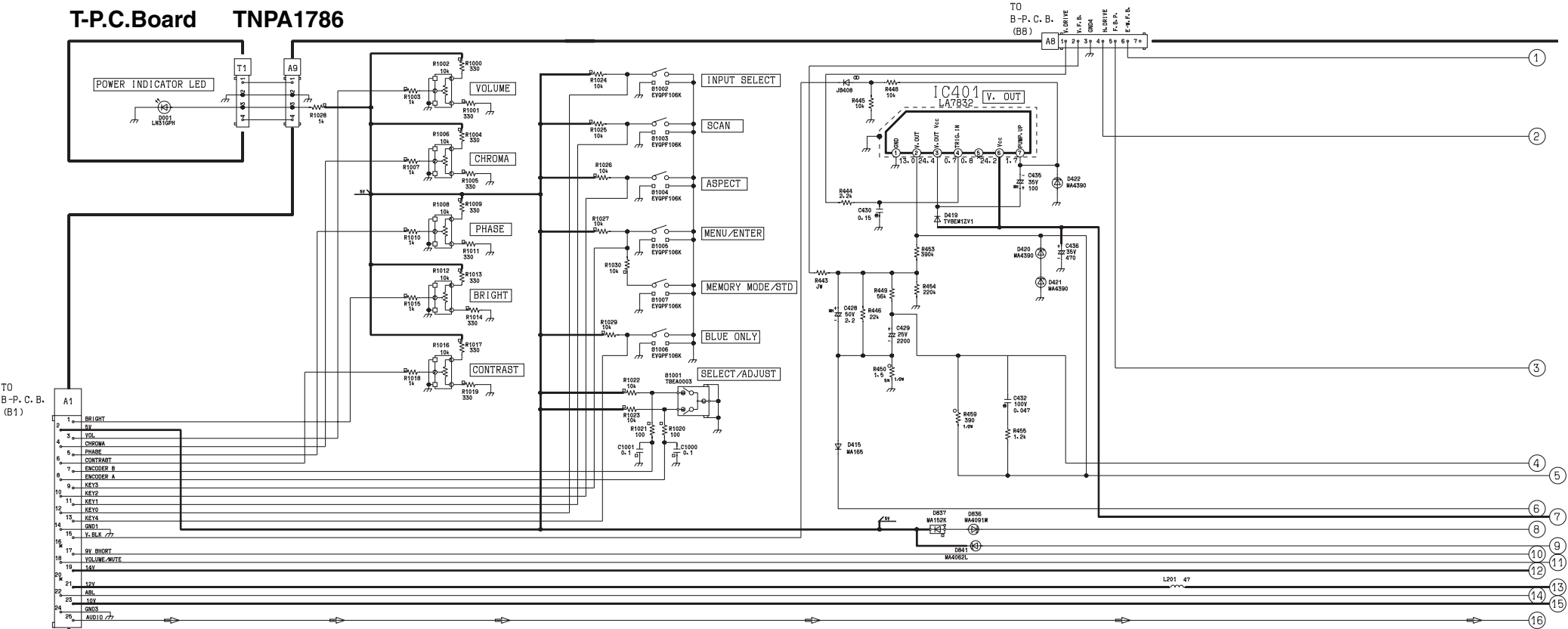
C

B

A



T-P.C.Board TNPA1786



S-P.C.Board TNPA1709

W-P.C.Board

B-P.C.Board

A-P.C.Board

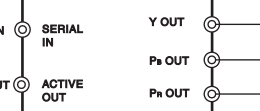
Y-P.C.Board

LINE A

LINE B

SDI

SDI UNIT



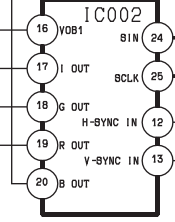
DS-P.C.Board

BT-S1315DAD/S1415DAD only

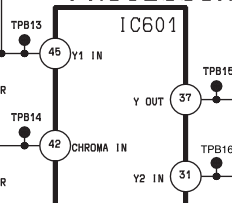
N-P.C.Board

TALLY

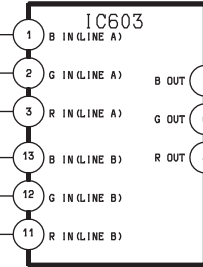
ON SCREEN DISPLAY



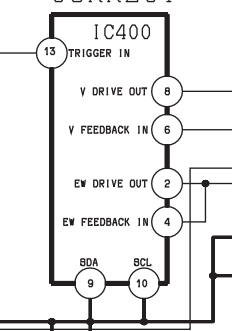
VIDEO SIGNAL PROCESSOR



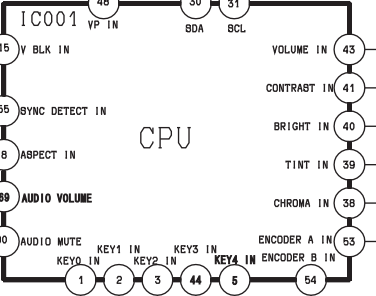
RGB SIGNAL SELECTOR



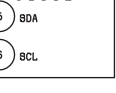
V DRIVE & DEF CORRECT



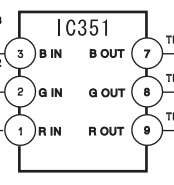
CPU



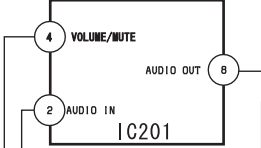
EEPROM



VIDEO AMP



AUDIO SIGNAL PROCESSOR



SPEAKER

A34JCD01X

F

E

D

C

B

A

